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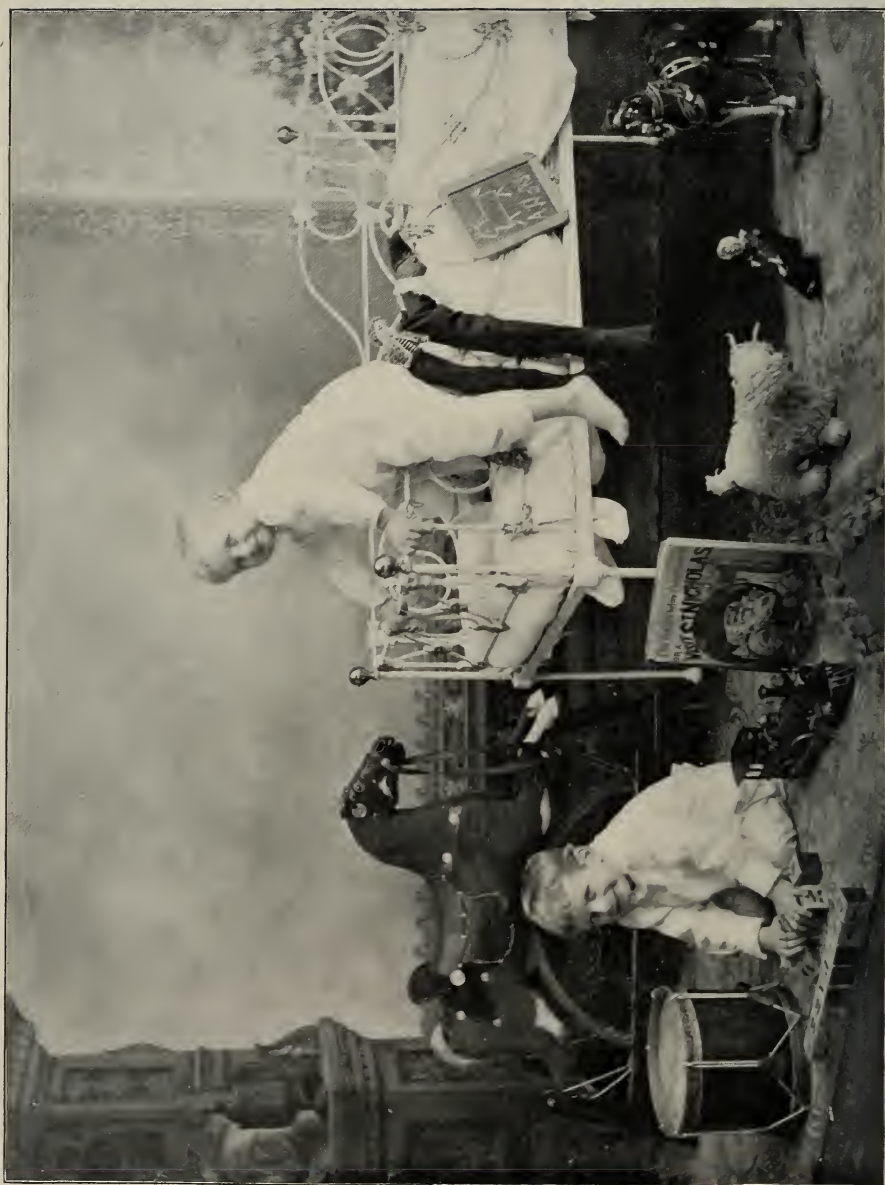
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CHRISTMAS MORNING.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

JANUARY, 1899.

No. 1.

THE NEW YEAR.

"Here's to you and your family;
May you live long and prosper."

—*Rip Van Winkle.*

AGAIN we have come to the season for the annual registration of vows, promises and resolutions for the new year, and, no doubt, many have already been outlined by members of the fraternity in regard to their business methods for the coming year. Many workers with whom business has been poorly, or only mediocre, in the past will, no doubt, begin to advertise that "From such and such a date my \$5 cabinets may be had at \$2." This is a serious mistake. If you are capable of doing good work raise your prices, for the past year has shown that those photographers who charge the higher prices have been by far the busier throughout the year. Right here in New York City, among the hundreds of photographic studios, the higher-priced man has done the majority of the work. We are aware of one city where in the poorer localities and neighborhoods a good man is surrounded by ten to fifteen so-called studios, clustered within three or four city blocks, but who, charging from three to five times that of the cheap man, keeps his place full of skilled workmen, and plenty of work. The same thing may be seen in many other places. Why is this so? A large percentage of the public to-day, owning and operating hand cameras and making pictures themselves, are more than ever aware that it takes both years of study, experience and brains to produce high-class portraits, and a large proportion of the buying public is willing to pay for these elements. But the photographer must keep up to the times. His ideas must be new and original at all times, and his work must plainly show wherein his superiority lies. Be able to show your regular customers that you are endeavoring to give them the newest, latest and best. Do not spare your dollars in getting and using the latest in instruments and new ideas in backgrounds, card stock and all the accessories that go to make up finished work.

Think out combinations for yourself in the way of mounts, for instance, which go a great way toward selling the picture; use that

paper which has proven itself a success, and you can, in handing your customer his pictures, honestly feel that in years to come they will be as when you deliver them now! Show in all your work originality, and charge for it all that it is worth. Do not endeavor to convince the public that you are willing to give them a \$5 picture for \$2; they won't believe you, and if they do, you will only have succeeded in proving yourself to be a very poor business man. You may lose a few sitters, but if you are paid a good price for your work you can afford to do less of it and better. We believe the day is not far distant when the photographic fraternity will attain a higher standing in the community than it holds to-day. This will have to be brought about, however, by the individual efforts, dignity and high quality of the output emanating from it, and it means inevitably that the cheap-john must go. The steadily growing amateur, who by many photographers has been accused of ruining the business, will be a real factor in restoring the good man to his position in the community.

Strive for perfection and a high standard of art in every sitting that goes out, and above all things let each picture in the dozen be the best you can produce, for as surely as one of the lot be poor, that one will be the first heard from, and will do more harm than all the other eleven can do good. Let our watchword then for the year be to raise prices rather than to lower them, and to keep up and in touch with all that is new, practicing originality and individuality on every possible occasion, and at all times. In this way may we best hope to achieve that prosperity which we seek.

COLORED PHOTOGRAPHS.

PROFESSOR NAMIAS has recently described a process for producing pictures of any color desired (*Bull. della Soc. fotogr. italiana*, 1898, page 247). Bichromate gelatine, as is well known, when exposed to light for a sufficient time, loses the property of absorbing salt solutions. On the other hand, the unexposed gelatine absorbs such solutions with great ease. If a bichromate gelatine plate is exposed under a positive, afterwards well washed and placed first in a bath of uranium nitrate, and then in one of potassium ferrocyanide, a beautiful red-colored picture, having all the tone gradations of the original, is obtained. In a similar way pictures may be made of almost any color desired. The procedure in detail is as follows:

Glass plates are coated with gelatine, immersed in a 4 per cent. bichromate solution and dried. The exposure is made under a positive on glass or a paper photograph, made transparent with oil, vaseline, etc. The plate is washed and immersed for fifteen minutes in the first salt solution (strength, 5 to 10 per cent.). After a short washing it is placed in the second solution, where a picture is produced by the double decomposition of the salts applied.

Namias mentions the following combinations of salt solutions:

No. 1.	No. 2.	Color of Picture.
Barium chloride.	Sodium sulphate.	White.
Uranium nitrate.	Potassium ferrocyanide.	Dark red.
Copper sulphate.	"	Red.
Ferric chloride.	"	Blue.
Cadmium chloride.	Sodium sulphide.	Yellow.
Lead acetate.	"	Black.

Very beautiful results may be obtained in this way with a little practice.

CARLETON ELLIS.

Massachusetts Institute Technology.

Items of Interest

WE note with interest that the scientific value of Professor W. M. Röntgen's work is being recognized by his fellow laborers and that he has been tendered a chair in the Faculty of Philosophy in the University of Leipzig, with extremely flattering inducements held out. It is generally believed that Professor Röntgen will accept the professorship. He has already been created a baron, and has been decorated with the order of the Royal Crown by the Emperor of Germany.

THE time-worn fallacy that the eyes of the dead retain impressions of scenes last made upon the retina, has again risen to the surface, and the lay press is making good use of it as a space filler. It is astonishing how vigorous some ghosts are and how difficult it is to keep them "laid" in this world. We are not quite sure whose turn it will be next, but can venture to predict that within the next thirty days another of the old timers will have claimed popular attention.

By a decision recently handed down by Judge Mitchell, of the Supreme Court of Pittsburgh, Pa., in the case of *Bardsly vs. Columbia Township*, in an action for damages caused by an accident on the township road, photographs are accepted, under certain conditions, as being pertinent testimony in the case under consideration, Justice Mitchell's decision reading: "Photographs are competent evidence, and when properly taken are judiciously recognized as of high order and accuracy, but in careless, or inexperienced, or interested hands, they are capable of very serious misrepresentations to the original. Before they are permitted to be used in a trial, therefore, there should always be preliminary proof of care and accuracy in the taking of them and of their relevancy to the issue before the jury."

It is reported that the British Government is considering and has under advisement a plan for the photographing of the great treasures contained in the national museums. We understand that the Earl of Crawford, President of the Royal Photographic Society is a prime mover in this matter, which, if carried out, will place before a large class of the community, representations of art treasures which otherwise they would be unable to have access to.

It is not, perhaps, generally known that one of the best remedies for bichromate and other poisons, induced by the use of developers and chemical agents, is to be found in dermaline. A number of cases have come to our notice recently, where the use of this simple remedy has almost entirely and very rapidly effected cures from troubles of this kind. This information should be at the hand of every worker in

photographic chemicals, as different constitutions are differently affected by various agents, and what will injure one may have no bad effect upon another; but the good results obtained from the use of this simple little remedy have been almost universal.



THE fourth annual convention of the Progressive Photographers of Michigan is announced to be held at Grand Rapids February 1st and 2d, and a very attractive list of prizes is presented. Professor Griffith will deliver an art lecture and give a criticism of the pictures exhibited, which are intended to include both amateur and professional work. Full information may be had by addressing F. C. Fryett, Secretary, 84 Monroe street, Grand Rapids, Mich.



THE "International Annual" is having unprecedented sales, only a very small number of the first edition being left at the present writing, and, from the way in which it is going, the beginning of the year will probably see the edition entirely exhausted. The comments from the press and individuals are coming in with rapidity, and an example of what is thought of the volume can be seen by looking over the advertising pages in the present number of the BULLETIN. "A word to the wise is sufficient."



OBITUARY.

JUST as the BULLETIN goes to press we learn, with deep regret, of the sudden death of Professor H. W. Vogel, director of the Royal Photo-Chemical Laboratory at Berlin, whose name is familiar to almost every photographer in the civilized world. The deceased was born in 1834, studied chemistry and physics, and almost constantly, since leaving college, has been connected with photography and its progress. He was well known as one of the scientific leaders of the day, his inventions, improvements and numerous publications making him a prominent figure in the scientific world, and his loss will be deeply felt by his many friends and the photographic fraternity generally. The *Photographische Mittheilungen* was published by him in 1864, and he was its editor until relieved a few years ago by his son, Dr. E. Vogel.

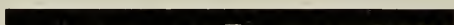
The Prussian government commissioned him as a jury member to the World's Exhibitions at Paris (1867), at Vienna (1873), Philadelphia (1886), Chicago (1893), and twice he accepted invitations of the National Photographers' Association of America and visited the United States in 1871 and 1883.



Mr. GEORGE DICKMAN, who had been for some time Managing Director of the Eastman Photographic Materials Company, in London, passed away on the 15th of November, after an operation. Mr. Dickman was a man of wide experience and travel. His death will be a heavy loss to the company whose interests he was serving, and will be mourned by many sincere friends on this and the other side of the water.



WE regret to announce the death of Mr. Tobias Zweifel, of Detroit, Mich., who has for a long time been well known to the photographic fraternity. Mr. Zweifel's death was very sudden, and his loss will be keenly felt by the fraternity at large.



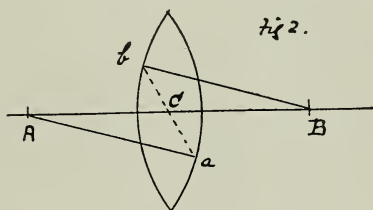
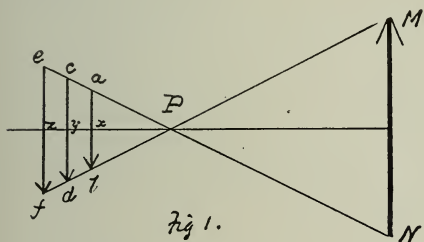
FOCOMETRY.

[Notes of a lecture by Mr. T. R. Dallmeyer, F.R.P.S.]

By REV. F. C. LAMBERT.

THE following "notes" were gleaned from the first Traill Taylor memorial lecture given by Mr. T. R. Dallmeyer under the auspices of the Royal Photographic Society on November 8, 1898. Not only is the subject of focometry interesting and important to all photographers, but also the names of Traill Taylor and Dallmeyer are so well known that this lecture is well calculated to interest all English-speaking photographers.

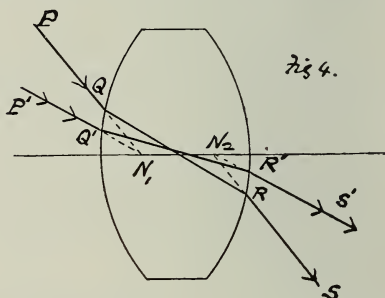
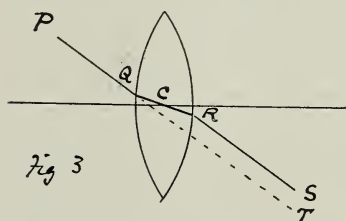
The lecture first explains how the focal length of a lens may be approximately estimated by employing a pinhole as image-forming apparatus. In Fig. 1 suppose MN to be some well-defined distant object (*e. g.*, line of a building) and P a pinhole. Now, as we increase the distance between the ground-glass and pinhole we get a corresponding increase in size of the inverted image. Thus, if the focusing screen be at x , at y and at z , the size of corresponding images, $a b$, $c d$ and $e f$, are obviously strictly proportional to the lengths Pa , Pc and Pe . Hence, we may in practice first take a nega-



tive of the object, using a lens, and second, without in any way disturbing the position of the camera, etc., take a second picture, but this time replacing the lens by a pinhole. Then, by a simple rule-of-three sum in arithmetic we may calculate the focus; for, as the size of the pinhole-formed image is to the pinhole distance from plate, so is the size of the lens-formed image to focus of lens. The lecture next deals with the forms of lenses and gives several diagrams illustrating the biconvex, biconcave, plano-concave, plano-convex, also positive and negative meniscus forms.

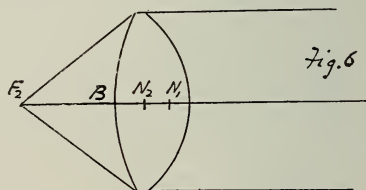
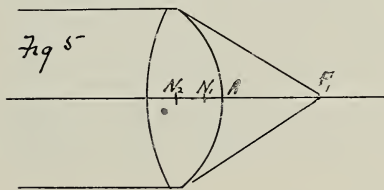
Before we can discuss any method of measuring the focal length of a lens we must first agree as to where it shall be measured from. When the thickness of a lens may be ignored, it is usual to measure it from the optical center. In Fig. 2 let A and B be respectively the centers of curvature of a lens (shown in section). From A and B two parallel radii Aa , Bb are drawn. The points a and b joined meeting the axis AB in C , the optical center. If a ray of light, falling upon a lens and entering it, passes through the optical center, then this ray, on emerging again from the lens, goes on its way in a direction parallel to the direction it had before entering the lens. For example, in Fig. 3, PQ , a ray, meets the lens at Q , is refracted at Q in the direc-

tion $Q R$ (which passes through C , the optical center); then the ray on emerging at R continues in the direction $R S$, which is parallel to $P Q T$, its original direction. Obviously the thicker the lens, the greater will be this lateral displacement. In photographic lenses the thickness is usually so great that it cannot be neglected with any reasonable degree of accuracy. Let Fig. 4 represent a lens (in section). $P Q$ an incident ray refracted along $Q R$ and emerging along $R S$. Let $P^1 Q^1$ be a similar ray passing through the lens along $Q^1 R^1$ and emerging along $R^1 S^1$. It will thus be seen that $P Q P^1 Q^1$ appear to be converging to a point N_1 , and when they emerge they, in a similar



way, appear to emerge from another point, N_2 . Gauss has shown that there are two such points. They are known as Gauss points, principal points, nodal points, nodes, centers of admission and emission, etc., etc. When the lens is infinitely thin, these nodes coincide with the geometric or optical center. We may imagine planes perpendicular to the principal axis of the lens and passing through the nodal or principal points. These are the principal planes.

If, now, we focus a lens upon a luminous point at such a distance that the rays falling on the lens are practically parallel, we get these rays converging to a point. Let Fig. 5 represent a lens receiving parallel rays from left to right and brought to a focus at F_1 . Then, with-

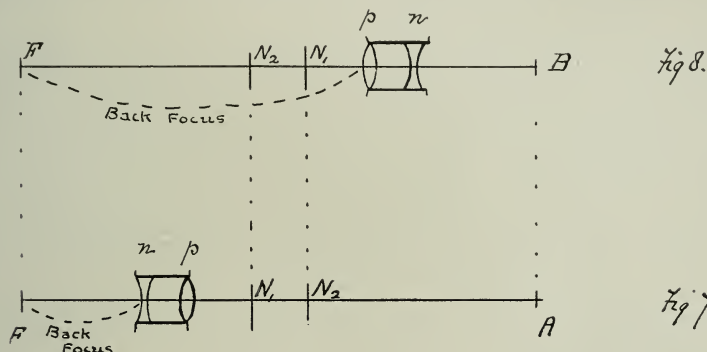


out disturbing the position of the lens, we allow similar parallel rays to fall upon the lens in an opposite direction, viz., from right to left. These rays are also brought to a focus at F_2 . And it is of great importance to note that F_1 and F_2 are equidistant from their corresponding nodal points, *i. e.*, $F_1 N_1 = F_2 N_2$.

Hence a lens (or system of lenses) has the same focal length (when measured from its nodes) irrespective of which surface the light first meets. But the back focus, *i. e.*, distance between focal point F and back of lens may be quite different, *i. e.*, in Figs. 5 and 6. $F_1 A$ and $F_2 B$ are not equal.

In the case of biconcave or biconvex lenses, the nodes are within

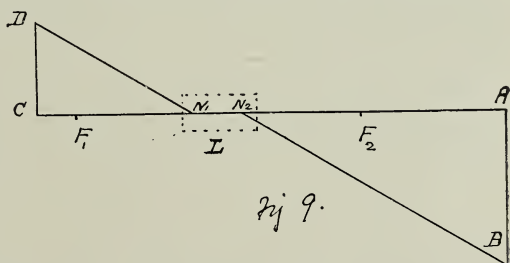
the lens. In plano-concave or plano-convex lenses, one node is at the pole of the lens, *i. e.*, one principal plane is tangential to the curved surface. In the meniscus form one node is always exterior to the surface of deeper curvature. Speaking generally, the internodal distance of a single lens is about one-third of the distance between the poles of the lens. Passing on to a combination of two or more lenses forming a lens system such as is commonly used in photography the author quotes three very useful formulas. Let f_1 and f_2 be the focal lengths of two single lenses, and separated by a distance, d . Then



the focal length F of the entire system or combination $= \frac{f_1 f_2}{f_1 + f_2 - d}$.

The back focus B , *i. e.*, distance between focal point and back lens, is $= \frac{f_2 (f_1 - d)}{f_1 + f_2 - d}$. Again, if w_1 and w_2 be the internodal distances of the two elements, then the internodal space, W , of the entire combination $= w_1 + w_2 - \frac{d^2}{f_1 + f_2 - d}$. In a combination the nodes

may be separated—may coincide or cross each other. The difference between the focal length and back focus may be something considerable. This is frequently the case with combinations of the telephoto class. The lecturer quotes a highly instructive example. A positive lens of $9\frac{1}{2}$ -inch focus, and a negative lens of

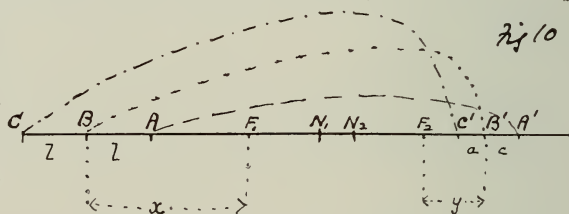


13 inches focus are mounted with a separation of 4 inches, thus yielding a focal length of $16\frac{1}{2}$ inches and "back focus" of $9\frac{1}{2}$ inches, when the light is first incident upon the positive element; but if the lens be reversed end for end, so that the negative element is in front, then the back focus is 22 inches. The two diagrams, 7 and 8, which are not drawn to scale, will help one to realize this case. In Fig. 7 the lens is shown as consisting of p , a positive element in front, and negative element n , at the back. Both the nodes of this system are outside it and in front of the positive element, as at N_1 and N_2 . Parallel rays of light passing from right to left are brought to a focus at F . So that the distance F to W , $9\frac{1}{2}$

inches, is the back focus. But the true or absolute focus of the system is $F N_1$, *i. e.*, $16\frac{1}{2}$ inches. The lens is now reversed as in Fig. 8. Its back focus F to p is now 22 inches, but its absolute focus is still the same, $F N_2 = 9\frac{1}{2}$ inches. And since the absolute focus of the system is the same for either position, the size of the image rendered is the same, although the back focus in the two cases is markedly different.

The lecturer then refers at length to a paper by Professor Sylvanus Thompson before the Society of Arts, delivered in November, 1891, wherein is described an instrument for measuring the focus of a lens or system. This apparatus is not conveniently applicable to cases where the nodes are outside the lens mount. The chief interest of Mr. Dallmeyer's lecture centered round a new form of focometer, which he describes. He first calls attention to some important relationships established by Gauss, as his instrument is more or less based upon them. In Fig. 9 AB is an object in a plane perpendicular to the axis of a lens system L . The image of AB is formed (by L , the lens) at CD . N_1 and N_2 are the nodes of the lens system. F_1 and F_2 the focal points, so that $F_1 N_1 = F_2 N_2$.

Gauss shows: (1) That CD is in a plane perpendicular to the axis of the lens system. (2) That the product of AF_2 and CF_1 is constant or equal to the square of the absolute focus, *i. e.*, $F^2 = AF_2 \times CF_1$. (3) That the linear dimensions of the image and object are in the square root of the ratio AF_2 to CF_1 , *i. e.*, $AB : CD = \sqrt{AF_2} : \sqrt{CF_1}$.



Mr. Dallmeyer avails himself of the second of these three results and constructs a beautiful instrument with which three observations are made and the absolute focus of any lens (or system) is at once deduced.

Fig. 10 will enable us to understand the essential parts of the instrument and its application. A lens is fixed more or less midway between the ends of a long, straight supporting beam of metal. The nodes of the lens system are indicated by N_1 and N_2 . A is a suitably illuminated object, *e. g.*, a transparent scale screen. The image of A is accurately focused on a fine ground-glass screen at A^1 . The positions of A and A^1 are carefully noted on the marked base beam. The object A is now shifted an arbitrary and convenient distance, l to B . Its image is again focused at B^1 , and the distance $A^1 B^1$ is recorded. The object is again moved through an equal distance, l to C , and the image a third time focused at C^1 . The distance $B^1 C^1$ being noted, the three distances, $A^1 B^1$, $B^1 C^1$, and AB or CD , being known, the focus of the lens system is now determinable. If we call $A^1 B^1 = c$ and $B^1 C^1 = a$, also AB or $BC = l$ and F the focus of the system, then

$$F = \frac{\sqrt{2 l a c (a + c)}}{c - a}.$$

As an aid in remembering this important result it may be of interest to show how it simply follows from the second of the three relationships established by Gauss and just quoted. Let F_1 and F_2 be the positions of the focus of parallel rays falling on the lens from right to left and left to right, respectively (then, as above shown, $F_1 N_1 = F_2 N_2$). Let us indicate the distance $B F_1$ by x and $B^1 F_2$ by y , and F the absolute focus of the system.

Then, by (2) of Gauss's results :

$$F^2 = B F_1 \times B^1 F_2 = x y. \dots\dots\dots (i).$$

$$= A F_1 \times A^1 F_2 = (x - l) (y + c) = x y + x c - y l - l c. \dots (ii).$$

$$= C F_1 \times C^1 F_2 = (x + l) (y - a) = x y - x a + y l - l a. \dots (iii).$$

$$\text{Subtracting (i) from (ii) we get } 0 = x c - y l - l c. \dots\dots\dots (iv).$$

$$\text{" (i) " (iii) " } 0 = x a - y l + l a. \dots\dots\dots (v).$$

$$\text{" (v) " (iv) " } 0 = x (c - a) - l (c + a).$$

$$i. e., x = \frac{l (c + a)}{c - a}.$$

Multiplying (iv) by a and (v) by c , then subtracting we get

$$y (c - a) = 2 a c. \quad y = \frac{2 a c}{c - a}.$$

Finally, substituting these values of x and y in (i) we get

$$F^2 = x y = \frac{l (c + a)}{c - a} \times \frac{2 a c}{c - a}. \quad i. e., F = \sqrt{\frac{2 l a c (a + c)}{c - a}}.$$

The lecture concludes with various examples illustrating this excellent method. The instrument was on view after the lecture and its various adjustments were examined by several experts with considerable interest.

N. B.—These notes must not in any sense be taken as exhaustive or covering all the ground of Mr. Dallmeyer's paper. We have purposely passed over various sections, so that the reader, having followed us so far, may be tempted to consult a verbatim report, where he will find discussed, among other things (here omitted), the consideration of methods based upon relative size of object and image, etc., etc. We hope in an early issue to show how Mr. Dallmeyer's method, as given above, may be employed by the ordinary photographer using a very simple home-made contrivance giving results accurate within the tenth part of an inch.

A most interesting chat was given before the English Photographic Club by Mr. E. W. Foxlee, who showed an album of prints made by some of the oldest processes of photography, several of which dated back from the inception of the art.

This album contained examples of Fox Talbot's Photogenic Drawing, the Calotype and Energiatype processes, the Calalissotype and Cyanotype printing methods, each of which were represented by one or more prints and an address on the method employed in their production was given by the speaker.

A print made by Redman in 1839 was shown, and pointed out as being probably one of the oldest photographs in existence. Mr. Foxlee's exposition of the subject was most interesting and instructive, and the collection shown was quite remarkable for its uniqueness.

A BICHROMATE PAPER.

BY CH. GRAVIER.

MANY amateurs take great delight in working out new methods of work and experimenting on new lines, and it is principally for these that we indicate the following process, which utilizes the chrome salts, that are not costly.

Immerse a sheet of white paper in a solution of bichromate of potassium or of ammonia at 4 per cent.; dry the paper (after an immersion of about five minutes) in absolute darkness, suspending it with a dip to a hanging sheet, or else in a book of very dry blotting paper (in case of drying by the latter means one must use a stronger solution of bichromate, say, at 5 per cent., instead of 4).

The dry paper is exposed behind a negative the same as with ordinary paper, to print directly (albumen, chloride, etc.), but only half the time given to papers prepared with argentic salts.

As soon as the details of the print are very clear, the image is plunged in water, and it is left there until the yellow tint of the bottom of the paper has disappeared. This operation consumes about half an hour, if one has been careful to renew the water for washing. The operation can be carried out by a weak, diffused light, covering the tray, meantime.

The image is then taken to a filtered bath of protosulphate of iron, in the proportion of 5 parts of the salt to 100 of water. After two or three minutes of immersion the paper is taken out of the bath, and it is plunged in clear water, which is often changed, at least for a half-hour.

To finish, the paper is plunged in a solution of gallic acid, which can, without any inconvenience, be more or less concentrated. In a few moments the image acquires all its development. It distinguishes itself by a beautiful violet-black tone, which is the most artistic tone, and the one most looked for in the ordinary process. Having obtained the proof, it is washed during a few moments in very clean water, and dried.

The air hardly alters the image. It is formed of a gallate of iron, or a species of ink deposited on the surface, and even in the body of the paper itself.

The paper, after having been treated with sulphate of iron, can be plunged in a solution of ferrocyanide of potassium, instead of gallic acid. Then one obtains an image with a Prussian blue tone, which, treated with acids, becomes greenish.

The alkaline solutions spread over it give it a deeper blue, with a tendency to violet.

In conclusion, the same paper passed through sulphate of iron, when it is afterwards treated with substances which produce a composite insoluble coloring, with sesquioxide of iron can equally produce colored images. But one must avoid the use of sulphurets, as the image obtained would be subject to spontaneous alteration by the action of the weather, just as it happens with the images produced by argentic salts.

Translated by F. P. VALERINO.

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

THE Application of Color-Sensitive (Orthochromatic) Plates.—The orthochromatic plate has been known now for over a quarter of a century, and, notwithstanding its undeniable advantages, has never met with such a universal application as its merits deserve. Reproduction photographers were the first to recognize the value of the plate, and have made good use of it.

But the color-sensitive plate is also equally good for landscape and architectural photography, and even for portraiture. Many a landscape with the various clearly depicted shades of the green trees, the blue sky and red-tiled roofs of the houses give ample proof of this, while on the ordinary plate we see nothing but black and white. The reason why these facts are frequently not so readily recognized is in the development. The superiority of the color-sensitive or orthochromatic plate is predominant only after longer development. As a rule, these plates are not sufficiently developed. In developing color-sensitive plates, the blue parts generally come first, much later the green, yellow and red parts. Too short a development will give the plate the same appearance as an ordinary plate. The extended development of the color-sensitive plate may, of course, cause fog sometimes, and this is what amateurs are particularly afraid of. But that does not amount to anything. Every over-exposed plate can, after fixing, be easily brightened and reduced with 100 parts fixing soda solution 1 : 8, and 10 parts red prussiate of potassium solution 1 : 10, both freshly mixed.

Another failure is the darkroom lamp generally used. There are hundreds of lamps which are sufficiently good for ordinary plates, but not for color-sensitive plates. Most of these admit the passage of green light, and the color-sensitive plate will fog in such light. The ruby glass should be spectroscopically tested.

Another great mistake prevails in the opinion that a great many do not know the difference between silver-eosine and ordinary eosine plates. The latter possess a very strong blue sensitiveness, so that they will give satisfactory results with a yellow screen only. The silver-eosine plates show considerably less blue sensitiveness, so that they require no yellow screen.—Dr. H. W. VOGEL.

Ammonia Persulphate.—Further experiments with ammonia persulphate have satisfactorily demonstrated the extraordinary importance of this new compound. By correct application it is proven, that every hard negative can be treated without the least danger with this solution, provided that the fixing was carried out very carefully. Those parts, which were not completely fixed out, will show a yellow streak in the ammonium persulphate treatment ($\text{N H}_4\frac{1}{2}\text{S}_2\text{O}_3$), which cannot afterwards be removed. In this regard the ammonia persulphate is undoubtedly more sensitive than the ordinary mercury intensifier. Negatives which are to be reduced or made softer by ammonia persulphate, have to be fixed in a double fixing bath, and, according to

our experience, the best way to proceed is as follows: The negative is first put into the ordinary acid fixing bath, where it remains the usual time, that is, at least twice as long as required for the disappearance of the bromide of silver. The next step is a thorough washing. If the negative then shows that an after treatment with ammonia persulphate is desirable, the washing process is interrupted and the plate is placed once more into a fresh soda bath, which is composed as follows:

Chloride of sodium.....,	50 grams.
Hyposulphite of soda.....	250 "
Water.....	1,500 cubic centimeters.

In this bath the plate remains for ten minutes, and is then thoroughly washed. It is not necessary to carry the washing to extremes if we carry the plate through two succeeding baths of ammonia persulphate. The first of which (according to results shown by recent experiments, should not be too strong, say a solution of 2 to 3 per cent.) is poured off after a few seconds and replaced by a second, somewhat larger quantity. If the plate has been well fixed, the action begins almost instantaneously, but proceeds slowly and surely.

If the apparently sufficiently reduced plate is now put directly into the water, it will be found that a very strong after-action of the ammonia persulphate takes place. It appears almost, as if the action continued in the water bath for at least ten minutes, in the beginning, too, at a pretty rapid rate, so that the negative will be almost in danger of becoming too thin. This action of the ammonia persulphate is irregular, and takes place particularly, when the fixing was not continued sufficiently long. To remove the action of the salt, the plate is put, shortly before it has received the correct reduction, into a 5 per cent. solution of sulphite of soda. While in this bath, under motion (which removes the action of the ammonia persulphate at once), the formation of a bluish white precipitate upon the plate is observed, which distributes itself during rocking. As soon as no more of the bluish white precipitate is visible, the plate can be taken from the solution of the sulphate and be washed at once. The after-action is then completely stopped.

The ammonia persulphate is also excellently suitable for the improvement of too hard diapositives; and a very agreeable property of the salt is, that a change of the color tone by the same will not take place, which, with diapositives and also bromide of silver pictures is of the greatest importance. Hard and spotty bromide of silver prints can be improved wonderfully by ammonia persulphate. At all events, it should be said, by reason of all these experiments, that the introduction of the ammonia persulphate in photography is a very important discovery of the present epoch. The circumstantial and difficult operation of chloride silvering is rendered almost unnecessary, as that, which can only be obtained with great danger for the negative by chloride of silvering, can be produced by the ammonia persulphate with great facility and without any risk.

Himly's Lead Intensifier.—This new intensifier, recently invented by the well-known photographic scientist, Herr Hauptmann Himly, of Vienna, is claimed to have advantages, that neither mercury nor any other intensifier possess, and if this proves to be a fact, it will be of immense value to the professional as well as amateur photographer.

It is applied in the following modified form :

INTENSIFYING SOLUTION.

Nitrate of lead.....	4 parts.
Red prussiate potassium.....	6 “
Distilled water.....	100 “

REDUCING LIQUID.

Sulphite of soda.....	10 parts.
Water.....	100 “

The well-washed plate is immersed in the lead solution by daylight and is carefully observed, until the required density has been obtained. It first assumes a yellow color after immersion, but will finally change to white.

If the plate is then immersed in the reducing liquid, an intense black will result. This kind of reduction, however, is not recommended, and it is much better to leave the plate in the lead solution until thoroughly bleached, and to reduce it then in some alkalic developer.

The advantages claimed for this lead intensifier are, that by repeating intensification the density can be extended to an almost unlimited degree ; an originally clear plate, when subjected to this intensifier, will never fog ; the plate so intensified will not lose a particle in the fineness of its grain ; and, finally, that it is absolutely durable and unchangeable. A plate intensified in this manner and used frequently for printing gave no evidence of a change during a period of nine months.

If it is desired to bring the intensified plate back to its original state, it is bathed in ordinary fixing-soda solution. This is also a great advantage of the lead intensifier. With all the other intensifiers it is almost an impossibility to return the plate to its original density.

Uranium Rays.—It is a well-known fact that many bodies, but particularly the uranium compounds, have the peculiarity of emitting rays in the dark, which, like the Röntgen rays, are active through opaque bodies, and produce upon gelatine plates developable impressions. M. Curie has made an interesting discovery in connection with this. He found that certain minerals which contain uranium and thorium will produce these uranium rays to a higher degree than the pure uranium salts. It appears likely, therefore, that the uranium rays are not emitted from the uranium itself, but from some still unknown body contained in these minerals. It was tried to isolate this body, and finally a substance was obtained which, in power of radiation, surpassed the ordinary uranium four hundred times, indicating the presence of an enormous quantity of these remarkable rays. It is

highly probable that we have here a new body with which to work, whose properties may become very important in photography. Investigations through the spectral analysis have led to no definite results, however, as yet.

How to Make Silhouette Pictures.—Use a room of ordinary size, with one window, and cover the latter with a screen of transparent white material, so that the window frame will leave no shadow on the screen. Now move the screen to suitable distance from the window, and shut off all side light. In front of the screen erect a platform for the subject to stand on. The height of the screen might be from 2 to 3 feet, and the lens should be opposite its center. Focus is to be taken on the subject, and not on the background, and the time of exposure must be very short, so that the figure will set off as a black silhouette from the background. From a half to one second's exposure, with a lens opening of $f/16$, is sufficient on plates of ordinary sensitiveness. The development should be pretty hard, to obtain, as much as possible, a glass-clear figure on a black background. Pictures of this kind, with the proper figures as subjects, possess a great attraction.

SINGLE TONER.

By C. T. MEACHAM.

MANY photographers, thinking that the Single Toner is a combined bath in which prints are fixed and toned at the same time, have condemned it without a trial. This is a mistake, as the prints are toned first and then fixed in a separate bath. There are several single toning solutions on the market and formulas for making the same, but all are imitations, and not to be compared with the "Single Toner" manufactured and put on the market by the American Aristotype Company, of Jamestown, N. Y. It is made of the purest chemicals, and especially adapted for their Platino and Junior papers. If properly handled, it will give results fully equal, if not superior, to the finest carbons made, saving all the delicate half-tones in the high lights, giving depth and brilliancy to the shadows, pure whites, and a print fully as permanent as any carbon made.

In this article I will try briefly to explain the simplest and easiest manner of working Aristo Platino and Junior in the Single Toner.

First.—The printing should be fully as dark as for double toning; print until the half-tones begin to show strongly in the strongest high lights. Too light printing gives weak and bleached-looking prints when finished.

Washing.—Prints should be washed in from eight to ten changes of clear water before toning; to thoroughly remove all free silver handle prints over in each wash water. Letting prints lie in running water for an hour without handling is not as good, as some prints will not thoroughly wash.

After washing, tone in the following bath :

Single Toner.....	2 drams.
Aristo Platinum	1 dram.
Water	30 ounces.

Prints should be toned in this bath until all trace of red has disappeared from the deepest shadows. If the toning is not carried fully this far, it will impossible to get pure whites or clear shadows ; but prints will come out after fixing a dirty, muddy green color, with no brilliancy.

Throw prints from toning bath into clear water until all are toned Then wash in four changes of clear water, handling prints over in each water to thoroughly eliminate all acid before fixing ; then fix in a plain hyposulphite of soda bath—18 grains strong, hydrometer test—for 20 minutes, handling prints during fixing, to insure perfect results. After fixing, wash in from ten to fifteen changes of clear water.

SOME THINGS NECESSARY TO REMEMBER.

In many places the water is impure, and red spots make their appearance. In trouble of this kind, add to every gallon of the first wash water 3 ounces of a saturated solution of sal soda. Handle prints over in this water from five to eight minutes. It will do very little good in any but the first water.

If prints, when put into the toning bath, bleach or cut out the high lights, spoiling the delicate half-tones, the addition of from 1 to 2 drams of Aristo Platinum to the toning bath will remedy the trouble.

Prints should be thoroughly washed in four changes of water after toning, before fixing, as the toning bath is very acid, and if this is carried into the fixing bath, it is liable to cause muddy whites, and produce prints with no brilliancy.

Never use your platinum tray for anything but Single Toner and platinum toning.

In working Aristo Junior and toning with Single Toner, print and handle just the same as if you were working Aristo Platino ; this will give you an olive-black tone, and the prints when burnished are much finer than warm tones, toned in gold.

When bronzing shows in the shadows, after prints are finished, the best remedy found is the sal soda in the first wash water. It softens the emulsion enough to allow the silver to wash out more freely in the heavy shadows, as well as allowing the toning bath to penetrate the heavy bronzed shadows, and thus removes the trouble.

The toning bath can be strengthened by adding 2 drams of Aristo Platinum and 1 dram Single Toner, always watching your bath to see that it is working right.

All wash waters and toning baths should be kept at a temperature of from 65 to 70 degrees during cold weather.

Last, but not least, use judgment in all your work, and don't condemn toning solutions, paper, etc., just because you do not have success, but remember that others are working them successfully, and you should be able to do the same.

A NOTE UPON THE MERCURIAL INTENSIFICATION OF GELATINE LANTERN SLIDES.*

By JOHN A. HODGES, F. R. P. S.

HAVING regard to the alleged fugitive nature of the results obtained by any method of intensification which is associated with the employment of mercury, it may seem to many rather a heterodox doctrine to suggest its use for the toning or modification of the color of lantern slides. Theory supports the view that mercurial intensification tends to impermanence. Practice, however—my own and that of others—does not altogether confirm this view; were it otherwise, these suggestions would not be made. I have employed mercury in various ways for the toning and intensification of lantern slides during the past four years, and I have not, during that time, found slides so treated less permanent than others produced by simple development.

But to insure permanence, it is absolutely essential to wash thoroughly in running water between each stage of the operation. To a rigid adherence to this rule I attribute, and entirely attribute, my own success. Moreover, I attach the greatest importance to the use of running water, for it is the only perfect means of eliminating the last traces of hypo and mercury; and those who cannot adopt this method of washing, or who have to rely upon prolonged soaking, should not, if they wish their slides to be permanent, employ mercurial intensification in any form.

Apart from the question of permanence, there can be no doubt that, properly used, mercurial intensification is a method which permits of results being produced approximating as nearly as possible to perfection. But to secure this desirable end, strict attention must be paid to several points of manipulatory detail. I may say at once that, in suggesting the employment of mercury, I am not referring to the occasional intensification of an over-exposed or under-developed slide, but to its systematic employment for the obtaining of a given result. The method is equally satisfactory, whether warm or cold colored slides are desired; in the former case, a slow, and in the latter, a quick, brand of plate being employed. I claim for the process a delicacy of color and transparency of deposit that cannot easily be obtained by simple development. In short, some of the finest slides I have been able to produce upon gelatine plates have been made in this way.

Briefly, my method of working is as follows: Sufficient exposure is given to produce, with a very weak pyro developer, a thin and delicate image possessing all the attributes of a good slide, except the necessary density. Any good developing formula may be used, but the mixed developer should be diluted to half-strength with an equal bulk of water. The exposure, whether in the camera or by contact, should be so regulated that development will proceed slowly and regularly without any tampering with the solution. The image must be full of detail, but entirely free from veil or fog. Very little practice, working upon these lines, should enable the reader to make the right kind of transparency.

Now, strict attention must be paid to the following details, or the final permanence of the slides cannot be insured: After the slide has been well washed, to remove all traces of the developer, it must be placed for not less than ten minutes in a freshly mixed and clean fixing bath of ordinary strength, after which it should be transferred to a second bath for an additional five minutes. These baths should not be used after the first day, or when they become discolored. The slide, after its removal from the second bath, must be thoroughly freed from every trace of hypo, and, as I have already said, the only really effectual method of doing this is to wash in running water. Probably the best plan is to place the slide under the tap, and allow a gentle stream of water to fall upon it. Half an hour of this washing should be sufficient. It is not always convenient to adopt this plan, particularly when there are many slides to be washed, in which case a more expeditious plan is to place the plates in a narrow wooden trough, which, if inclined at a slight angle, will allow the water to run over the plates as they lie at the bottom, in a gentle stream. Failing this, an ordinary syphon tank, fitted with rack for the reception of the slides, may be used; but in this case, the period allowed for washing must be considerably longer—

* *The Amateur Photographer*, November 11, 1898.



PHOTOGRAPHED BY HENRY B. VANDERVEER.

THE FIGHT.

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not less than an hour and a half or two hours. If the plan of washing the plates singly be adopted, which is the one I recommend, splashing may be entirely avoided by tying a strip of rag to the spout of the water-tap long enough to just reach the plate.

The hypo having been eliminated, the next step is the bleaching of the image. To effect this, a saturated solution of bichloride of mercury is employed. Sometimes minute air-balls form on the surface of the film. These must be immediately removed either with the tip of the finger or a clean camel's-hair brush. Allow sufficient time for the bleaching action to be thoroughly performed, pour off the solution, and wash under the tap for a quarter of an hour. The slide is then ready for redevelopment or intensification. This may be done in a variety of ways. The developer employed for the development of the original image may be used, or a weak solution of ammonia or of sulphite of soda. Personally, I prefer, and generally use, ammonia, notwithstanding the alleged impermanence of results attributed to it. The strength is not particularly material, but it will be found best to use a weak solution, because the result will be more under control—40 to 80 minims of a 10 per cent. solution to an ounce of water may be suggested as being a useful strength. Ammonia produces, with some plates, a rich, warm brown; in others, a sepia or chocolate. The final color, however, depends very much upon the plate and the color produced by the original development of the slide. If the original color was cold, the final color will also tend in the same direction, and *vice versa*. One curious property of ammonia is that, if a weak solution be used, the color will at first be warm, and will then gradually become colder, until the maximum of density is obtained. From this stage, however, the solution begins to act as a reducer, and the image will gradually lose strength until a point will be reached, when the density will actually be less than before intensification. During the time this effect has been proceeding, the slide will have been becoming colder in tone; but its quality, apart from density, will not in any way be impaired, there being no loss of gradation or eating away of the more subtle tones, which is inseparable from the employment of an ordinary reducer.

The command over the final result, which this method affords when intelligently worked, is simply enormous, almost any effect being producible with ease and certainty. It is one that, so far as my experiments have gone, is applicable to any commercial brand of plates, though the colors and results are, of course, widely different. It is particularly suitable for chloride plates, producing the most delicate and transparent shades of brown and sepia with certainty and celerity, and, at the same time, removing the only difficulty connected with the manipulation of these otherwise excellent plates, namely, the uncertainty, and, in some cases, unpleasantness, of color or tone of the slides produced upon them. The treatment of chloride plates should be identical with that already described, all the precautions insisted upon being carefully followed.

The only possible objection to the adoption of this method of working is the halo of doubt as to the permanence of any photographic method in which mercury plays a part, but on this score I do not think much apprehension need exist. This, at any rate, is my own experience, for I have slides by me, produced in the manner described, so long as four years ago, and these do not exhibit any sign of deterioration or change, notwithstanding the fact that they have been through the lantern some hundreds of times. More cannot be said for warm-toned gelatine slides produced by development, for such will, sometimes, unaccountably fade, or, rather, deteriorate, so far as tone is concerned, in a less period than that stated. The danger of the process, of course, lies in a neglect of any of the precautions that I have so strongly insisted upon. These are, to briefly recapitulate:

(1) Thorough fixation and removal of any complex substances from the film by the employment of two freshly made fixing baths.

(2) The complete elimination of the last traces of hypo by prolonged washing in running water.

(3) Copious washing in running water between the various subsequent operations.

SOME PRACTICAL HINTS ON PHOTOGRAPHING FLOWERS.*

By JOHN BARTLETT.

A DISCOURSE on flowers is a tempting theme for fancy, both by reason of their artistic loveliness as well as poetic associations; but, for the present, I shall "bridle my struggling muse," and touch merely upon the practical side of the subject, to meet the editor's request for something brief and practical.

As objects for the amateur to exercise his technical skill upon, nothing can offer broader scope. We have in them all the elements pliable enough and subject to our will, but quite as difficult to handle when one is striving after artistic and technical effect as the posing and rendering of the human head. They demand the same patient observation from many points of view, just as portraiture does, a study of



John Bartlett,

MARGUERITES.

Philadelphia.

their individual peculiarities, and a conception of the proper angle and amount of illumination for rendition of texture.

A flower, especially a white one, should never have the appearance of marble when presented in the photograph.

Plasticity is not to be desired, but the rendering of living diaphanous tissue. The delicate translucency of the lily or the interpenetrating light of the rose-petal cannot be secured by unmitigated doses of strong light, though one selects the artistic angle of forty-five degrees.

There is a great deal too much stress laid on the paramount importance of top-light even in portraiture. Every one knows how painters get superb results with side-lighting, and why should photographers adhere to the stereotyped methods?

*Reprinted by permission from Wilson's *Mosaics*, 1899.

Beautiful effects of relief, combined with the wished-for textural translucency, are obtained with flowers by employing direct side-light. Indeed, some flowers, especially the varieties having demascene or plications of the petals, cannot be properly photographed in any other way. But I do not mean to say that top-light should never be used. Some striking effects may be had with top-light alone, or by reflecting the light upward. Of course, it is necessary to support the shadowed side by judicious reflections, but caution should be taken not to place the screens too close to the objects, and so prevent the rendering of the texture by too great radiation of light from the surfaces. Veer the camera about the subject until you perceive the translucency as well as relief. Generally an inclination toward the light secures these desiderata. Often, by pointing the camera directly against the light, having the background high enough to prevent the entrance of light in the lens, will give novel results.

A subdued light is better than a strong one, but do not depress the illumination so as to destroy contrast. A few trials in curtaining off the light with tissue paper will give you better ideas of what is needed than many pages of description. In most cases the principal light should come from one direction and shadows controlled, but cast shadows and subordinate illumination will add much to the artistic effect. It is worth the pleasure, if not the instruction, to watch what marvelous transformation a proper artistic illumination will give the most commonplace objects, if they are so disposed as to give a balancing of light and shade. A piece of unbleached linen, a sheet of white paper, a porter bottle of green glass, an apple, an ink stand, are prosaic enough in themselves, but they furnish a scale or notes which can delight us with their artistic harmony.

We are all aware how strikingly a single figure, if well painted with the simplest kind of background, will stand out in a gallery. The most elaborated work seems weak and ineffective

beside it. And why is this? One word will give the key—simplicity. If distracting elements are introduced, making lights and shades of equal value, the lights and darks must not compete with each other. There ought always to be, to have a good picture, a point of highest light and a spot of dark, with intermediate gradations.

This is hardly the place to discourse on values, but I cannot forbear to say a word, since the whole effect of light and shade in a picture—that is, the standing out of one part from another, is dependent upon the proper perception of the relation of one tone with another. If all objects were either black or white, this sense of judgment of tone would be comparatively easy of cultivation, but the variety of shades of color in objects, and the effects produced by reflection, demand a close and accurate study of things in relation to one another in order to appreciate harmony of light and shade.



John Bartlett,

Philadelphia.

DAFFODILS.

Not all of Nature's accidental combinations are equally beautiful. Some delight us more than others, but Nature never offends our sense of the beautiful by the discords we see in ill-conceived painting or genre photography. Really no object can stand isolated. We have our impression of things modified by surroundings, and it will be seen that haphazard association may affect us unpleasantly, if no due regard is had to modification by juxtaposition.

Fortunately the modern isochromatic plate enables us to render better the color values than the heterochromatic plate; but still one must exercise judgment in association of different colors so as to secure the desired values in the photograph.

Nothing in photography is more injudiciously used than the color-screen with orthochromatic plates. It has its value, but its constant employment without any consideration of the subject is an abuse of a good thing. Frequently it will depress the blue to such an extent as to give a flat, dull effect, and very often it destroys all atmosphere in the picture. I prefer to get along without it. The medium isochromatic plate which Cramer gives us leaves little to be desired and will render the yellow and orange of flowers excellently. When I have blues and violets in my composition, along with the yellows, and there is danger that they will be too self-asserting, I depress their photographic energy by placing them in the shadows. Besides the ray-filters necessitate prolonged exposure, for with flowers more so than with anything else full time is demanded, and your flowers are by no means good sitters.

Even when one has blues and yellows in the same flower, care must be taken not to use too deep a colored screen, and moderately repress the actinism of the violet ray.

I have only space to say a word about development, but that word is necessary, inasmuch as the whole effect of disposition of light and shade may be made null and void by inconsiderate development. Adapt your development to exposure, and diagnose your plate during development, and exalt or depress as you may find necessary. Generally a rather slow development with flowers will give softer and more harmonious results than rapid development, but be careful not to lapse, in your endeavor after softness, into tameness.



KEEPING, OR HARMONY OF COMPOSITION.

BY WILLIAM MCEWEN.

IN a recent article published by the *Photographic News* under the above title, the author treats of a matter which has always been a source of difficulty, not only with the amateur, but very largely with the professional photographer, as may be seen by careful examination of large numbers of the groups and *genre* pictures displayed at conventions and print exhibitions throughout the country, and while his article is written more particularly for the amateur, it will not fail to be of interest, and may be made of great value if carefully studied by the professional photographer.

In treating of this subject Mr. McEwen takes the word "Keeping" as his title, and goes on to say that:

"Keeping, though an art term, is seldom made use of in photography; it is used more in connection with color than black and white. But its companion word, if I may call it such, is greatly used in our art—I allude to harmony. It will suit us here if we treat both words, or terms, as having practically the same meaning. We will often see it written 'that one portion of a picture is not in harmony with the other portion,' and 'forming one harmonious whole,' and similar

passages, which to a beginner, are rather confusing. When a portion of a picture is slightly out of harmony with the other portions, it is put down as being out of harmony, and when portions are greatly out of keeping, incongruity prevails. To uneducated persons, or, I may say, people who have no selective capacity, everything will appear beautiful or otherwise, but they are debarred of that sense of feeling that tells us why such is the case. And if such a person attempted to make a picture of a certain scene he would be at a loss, and might add portions which would be detrimental to the whole, or take away that which was valuable. This is more especially the case when dealing with figures. It is not only the age, attire, etc., of the person that is to be taken into consideration, but the very placing of the model must be in keeping. A cultivated mind—one with a sense of knowing and discrimination—will readily ‘fall to.’ He will know immediately what is in keeping with his subject or what is out of harmony, and he will set about his task with little difficulty; and should he have any doubt about a portion of the scene he will not risk his feelings being injured, so the doubtful portion will be rejected. Photographers generally go to such extravagance over the picture—they must get in all they possibly can—that simplicity and quietness is entirely lost.

“A landscape is made up of two large bodies—one portion consisting of the land and the other the sky. Our first and chief consideration is that these two bodies work together, not against each other. If we have a landscape the sentiment of which is repose, we must have a quiet sky; should we have a landscape of a troubled nature, our sky ought to have an angry look. ‘But what do you mean by a quiet sky, or a landscape in repose, and when is the landscape troubled? or explain an angry sky, so that my landscape and sky may be in keeping,’ the reader may ask. By a quiet sky is meant that the clouds should be more of the mackerel nature, or fleecy, but not heavy banks—just faintly showing. By repose is meant rest or peace. There would be repose in a flock of sheep resting after a tiring journey, and yet no repose when men were hard at work in the field, perhaps at the plough. A landscape would appear troubled when the trees were bending under the force of the wind, and sunshine is wanting. It is here that it is necessary to have an angry sky—one that is heavy and the contrast great—for the peace of the landscape has been disturbed. Keeping is outraged when these two main bodies are opposed to each other. This is all that need to be written about harmony as far as the sky is concerned, but with the landscape, or lower portion of the picture, closer observation is necessary, for a composition of a landscape may consist of many portions, and it is necessary that all those portions should work in perfect accord, for if one portion, however small, should be out of harmony with the scene in general, our photograph would utterly fail as a picture. We will now proceed to take a few examples generally met with in an amateur’s work.

“Landscapes seem to afford the favorite attractions to amateur photographers. The fields, with their figures, cottages, paths, ruts and streams; the mansions, with their terraces, lawns and lakes; coast

scenes, consisting of rocks and undulating shore—all come in for their share of attention.

“Now, in the early or spring competitions of the year, hay-making comes in for, perhaps, more than its just proportion. We will suppose that we are about to make a picture of such a scene. What should be the requirements in such a composition to make it a success? On keeping, both as regards tones and figure, would rest in the main the responsibility. On tones, as far as the cart and its load; the horses, as far as contrast and background, and the figures to harmonize with the idea. In such a scene we will take it for granted that a man from town would be out of place, and I will also take it that the reader would already be aware of this fact. Our business now is to give each part or object its individual attention. We will take the figure first. He is to be in thorough agreement with the scene. The student may have a model suitable, but what does his attire consist of? At a glance his dress is also suitable. A plate is exposed, and in the finished picture there is one spot that we feel we would give anything to get rid of, one spot that destroys the whole—very small, indeed, but significant on account of its destructive power. The figure wears a hard felt hat or a conspicuous collar and tie. I should like to state here an incident in support of this that took place while I was staying in the country about two years ago, though I have not obtained my model's permission to do so. My father wished to appear in one of my pictures of a country scene. I did not like the idea of dictating to him, and suggested a portrait. He would not have this, saying he already had plenty of portraits, but wished to be taken as a woodman felling a tree. I had to submit. Suitable clothes were procured, the final touches would be made on the spot. Everything else ready, I asked him to remove his watch chain, which he did, but absolutely declined to remove his collar, with the result that he has regretted it ever since. This small ring of glaring white, and everything that is out of harmony seems to glare, destroyed the whole. Keeping was outraged. I yielded under pressure to make the exposure, but stated beforehand what would be the result. It is these small spots which are so often neglected, except by the critic. He is always on the watch for them. His sight is keen and his words as sharp. In the haymaking scene the same applies to the color of the horses, to pick out such as will be in keeping with our process and the scene, and to study the background for relief, for what could be worse than a black horse in front of a dense mass of trees, without any relief?

“We will now briefly run through a few other instances where keeping plays a conspicuous part, and I will take quite a different subject, say a *genre* study. The feeling to be conveyed is one of want, and we will title the supposed picture ‘Poverty.’ We know that the slightest indication of wealth would be destructive to the whole. The figures are well supplied with attire tattered and torn. The tables and chairs are in keeping with the scene. The floor is carpetless. The walls are not only pictureless, but the paper has strips in it which echo the worn-out clothes. The artist has been careful in all this,

yet, on closer examination of a female figure, we find that she wears shoes which were made for velvet pile rather than a hard brick floor, or that she may have her hair made up in a style that would denote fashion.

"The more important the work, the greater the intensity of the fault. In a picture of a country mansion—and such subjects, when skillfully treated, always make charming pictures—we wish to have a picture denoting wealth and grandeur. What would form a better addition—in fact, make a picture—than a lady on the terrace or balcony, maybe conversing with some one below; or a swan on the lake in front of the house; or, better still, both; or a saddled horse waiting for its rider? All would denote greatness. Permission is readily given by these estate owners to amateur photographers when applied for in a proper manner, and, very often, interest is taken in your work and help afforded. One gentleman even offered to put on hunting attire, an opportunity I gladly availed myself of, and a shout of 'Tally ho!' brought up the ears of his horse to perfection.

"I feel I have already carried this article on 'Keeping' far enough, and yet should like to give one or two more instances in which it would play a prominent part, for it is in harmony or keeping that, in my opinion, amateurs generally fail [and in our opinion, professionals more often.—EDRS.]. Then a few words on the treatment of the color of the print and its mount will finish this article. A scene that would have made a beautiful picture, but the distance was too great for the lens I had with me, the focus not being long enough, was witnessed at Carisbrooke Castle. It was only about a quarter of an hour before that I exposed a plate on the castle from the very spot that would now have suited admirably for the production of a picture. Down the slope in front of the castle came a troop of lancers. The effect was grand, and what could have been in better keeping with the old castle. Never did it look so old or the lancers so smart as now. The glittering of the lances, and the contrasting colors of the uniform, compared beautifully, though strongly, with the grimy-looking, prison-like walls, and I thought then more than ever of the king that was once its guest.

"Another, and quite a different subject, in which the entire success would depend upon keeping. We will see this time what can be done with a railway engine, perhaps one of the most ugly objects that was ever made. What is to be done, and how are we to make it appear beautiful? There would be no art in taking a photograph of it before its shed, quite motionless, in all its ugliness, for it is an object of power and force, and under the above circumstances it would be typical of neither. Now, take it as an artist would represent it. Firstly, we have it in motion, and his aim is to add to the force and power. An opportunity will be seized when this power is at its full, when it is leaving behind a stream of black smoke, when the driver has his anxious eyes fixed intently on the signal, and the stoker plying the coals. A thrill goes through us, and we hope that it will arrive at its destination safely. The effect would be spoilt by waiting for the sun to shine. A dull day, a storm or heavy sky would all add to the effect, and be in keeping. Such pictures are possible from most station platforms.

"For a quieter example, I recently noticed a photograph of some fowls. Their terrified look would move one to sympathy. They were driven into a corner and the lens pointed at them, nothing but blank walls all round. Poor plates, to be exposed on such a worthless subject."

THE REDUCTION OF NEGATIVES.*

IT is the reduction in density, not in size, that we refer to, and we would begin by repeating the advice that we have often given before, namely, to avoid reduction and to trust to intensification, if the negative cannot be developed at once to the desired density. Intensification, if properly carried out, is perfectly safe, maintaining the characteristics of the gradation, but giving a greater or steeper range, and, moreover, a change that can be foretold; while reduction is uncertain, altering the nature of the gradation, and can never lead exactly to any given desired result. This difference between the two operations is due to the fact that in intensification it is possible to add to every particle of silver in exactly the same manner and to the same extent; the various changes can be made complete, while in reduction the stopping stage of the action must be guessed at, and obviously the action cannot be made complete, for then no image would remain.

Another characteristic of reduction is that, unless exceptional and more or less round-about methods are employed, the shadow detail is attacked to a greater proportional extent than the denser lights, because the greater proportion of it lies nearer the surface of the film. For some years after the writer pointed out this fact it was discredited and neglected, but now it is thoroughly well known, because it is taken advantage of by every maker of photo-blocks who uses gelatine plates. A similar effect is obtained by reduction on a negative made by the wet collodion process, and for an analogous reason.

Although reduction is always uncertain as to its extent, and generally unproportional in its action, its very peculiarities render it sometimes a most valuable operation. For negatives of half-tone subjects, that is, ordinary negatives of solid objects, we still maintain that it should be avoided whenever possible. But a negative of a black and white line subject may generally be very much improved by reduction, the lines being cleared by this means of the small deposit that is better away, while the other part is not much affected. For such a purpose as this it is important that the reducing solution shall act quickly, doing its work almost as soon as it comes into contact with the deposit, removing, as it were, a layer of image from the surface of the film. For if it soaks into the film, and works more gradually, the effect will be nearer to a proportional reduction of the whole. Strong solutions generally act quickly, and weak ones slowly, and, by taking advantage of this fact, a certain measure of control in this matter is possible. Probably, on the whole, Farmer's solution of ferricyanide and hypo is the most convenient, though ferric oxalate and hypo, or ferric chloride, or other halogenizing reagent, followed with hypo, will show the same characteristics.

The excessive action of reducers in the thinner detail of the shadows is due to the thinner deposits penetrating to a less depth into the film. If, therefore, the reduction could be made to begin at the surface of the film next to the glass, to work, that is, through the film in an opposite direction to that of the developer, the result might fairly be expected to be more uniformly proportional. By a somewhat circuitous method, this is possible, and the result is satisfactory, judging only as far as possible without exact measurements. The whole image is reconverted into bromide of silver; it is then redeveloped partially, that is, till sufficient density is obtained, and then fixed. The development working from the outer surface obviously can affect the shadow detail at once, and that portion of the rehalogenized image that is not developed the second time is that portion that is deeper in the film, and was developed in excess during the original development of the plate. Therefore, that part of the image that is removed is from the lower part of the film, which is as desired. We have used for the rehalogenization a solution of ferric chloride, containing rather more than twice its weight of potassium bromide, only enough ferric chloride being added to the water to give it a marked yellow color. The exact strength is not important. When the image is bleached right through, the plate is washed, and the redevelopment may be effected by probably any developer that may be preferred.

Ammonium persulphate has lately been introduced as a specific reagent for effecting reduction, and it is claimed for it that it does not reduce the thinner detail unduly, and that in using it no fear need be entertained as to the loss of detail in the shadows. It may be remarked that potassium persulphate, the so-called "anthion," in aqueous solutions, also reduces negatives, but it is so sparingly soluble that the ammonium salt is preferable. It is quite easy to understand that the alkaline persulphates should dissolve finely divided metallic silver, and certainly they are the neatest reagents yet proposed for this purpose, from a chemical point of view. But it was difficult to believe that they should act in so contrary a manner to other solvents of silver. However, experiment shows that it appears to be a matter of fact. In one experiment we reduced two portions of the same strip of graduated exposures, one with ammonium persulphate, and the other with ferricyanide and hypo. The strip reduced with the persulphate is less dense in the most opaque part, and more dense in the thinnest part than the other.

An explanation of this anomaly has been attempted by Messrs. Lumière and Seyewetz. Their explanation, however, appears to us to be very insufficient, and, moreover, we fear it is not altogether founded on fact. They suggest that the silver dissolves, forming the normal sulphates of silver and ammonium, or a double salt containing both bases, but that at the surface of the film where there is excess of the persulphate, the persulphate exercises the reducing action shown by some peroxides, notably hydrogen peroxide, and so effects a redeposition of the silver. Deeper in the film, there is no excess of the persulphate, and so they imagine the silver is dissolved, and not reprecipitated, though how the solution gets away out of the film in spite of the supposed reducing action of the excess of persulphate in the outer side of the film, we are not aware that they have ventured to make any suggestion. They liken persulphates to "oxygenized water," that is, peroxide of hydrogen, but these two substances are very different, and especially so in this very reducing power that the hydrogen peroxide possesses. When a persulphate acts upon a solution of nitrate of silver, it is supposed to give a black peroxide of silver, and not the metal. And a solution of ammonium persulphate in which silver has been dissolved—for its solvent power does not appear to be retarded by the presence of excess of the persulphate—may have a considerable quantity of the persulphate added to it without the deposition of anything like silver taking place.

There are other discrepancies and insufficiencies in this explanation suggested by Messrs. Lumière and Seyewetz, but we will not pursue the matter. We will only add that no explanation that presents itself appears to be sufficient, but that, if it is a case of reprecipitation after solution, and if the reprecipitated matter is an oxide of silver, then it leads to the production of an image containing a very undesirable constituent. But, whatever may be the action of the persulphate, its effect is a very useful one, and we can heartily commend it from this point of view. We find a 3 per cent. solution quite strong enough, although a 5 per cent. solution is recommended.

There are other methods of reducing negatives, or at least of getting the effect of reduction. A thin transparency may be prepared and placed over the negative during printing. If, for example, the sky of a negative needs to be reduced, it may be treated by one of the reagents mentioned above, or the other part of the negative may be made to print more slowly by means of mat varnish, colored varnish, or a fine translucent paper. Expert retouchers will shave away a part of the film where a small part is too dense, and the rubbing away of a part by means of cotton wool or wash leather slightly moistened with alcohol has often been described.

C. J.

All copy for February number must be in our hands not later than January 15th.



REPRODUCTION UPON DRY PLATES.

BY O. PÖHNERT.

THE dry plate finds a very good application by the side of the wet collodion plate in the studio of the reproduction photographer, particularly with originals rich in contrast, or such as have uniform surfaces, skies, etc., in autotype line or grain drawings and with colored originals, as it will reproduce yellow and red much better, than the iodized silver plate. When the silver bath will not work during the hot days in summer, or in an insufficiently heated laboratory in winter; or when during hot weather or bad light, the time of exposure was so long, that dry spots upon the plate are unavoidable; or if the line negative sweats at cold temperature, or when the distance to the screen is only a minimum one, the dry plate will give the quickest relief, and the result, in most cases, can hardly be distinguished from that of a wet plate.

To be successful, a little experience is, of course, necessary.

Suppose a good photo or india-ink drawing, with many details, good depth and uniform sky, or other large and bright surfaces, is to be taken for an autotype upon zinc and to one-half of the size.

The screen plate is cleaned, as usual, with a little acidified water (nitric acid), and polished over with a soft chamois skin. The proper distance is given to it in the plateholder—for dry plates, a little less than under the same conditions for a wet plate—because the points, remaining faithful to the character of the dry plate, have the tendency to expand, or spread out sideways. Those who make use of this characteristic, and act accordingly during exposure, will accomplish the best results. Suppose we work with a Levy screen plate and a light of 6 to 8,000 candle-power, to about four incandescent lamps, 34 ampère per lamp, we have, above all, to light the original uniformly, but not too strongly. Expose with smallest diaphragm for about five seconds, then with a medium diaphragm for five to six minutes, and finish with a correspondingly large diaphragm opening from one-half to three-quarter minutes. If the exposure is in daylight, the proportion is a little different, and we have to use the diaphragm next to the smallest for fifteen seconds. Then we expose with the medium diaphragm for ten to twelve minutes upon the half-tones, and finish with large diaphragm from three to five minutes upon the high lights.

Now the developer has to be in readiness. Old developer is preferable to start the development until the picture appears, but fresh developer should be held in readiness in another tray for further development. In this way, provided the exposure was correct, no fog will be obtained between the points. Foggy negatives of that kind are lost, and cannot be remedied by any manipulation. If the picture appears too quickly in the fresh solution, the development may be continued in the old developer. On the proper use of the developer depends the production of a negative, either hard and rich in contrast or monotonous.

Above all, care should be had, contrary to the iodized silver plate, not to expose too long. The best results are obtained by correct exposure and by application of a good, hard-working developer.

The following formula can be well recommended :

SOLUTION A.

Metol	15 grams,
Sulphite.....	150 "
Distilled water.....	1,200 cubic centimeters.

SOLUTION B.

Potash	50 grams.
Water.....	500 cubic centimeters.

Of solution B the fourth, at most the third part is taken in proportion to solution A. Bromide of potassium should be avoided, and the same is best replaced by old developer. The fixing is done in an acid fixing bath, to obtain the greatest clearness in the film. If reduction is necessary, red prussiate of potassium and fixing soda, carefully applied, may be used. But such a negative can seldom be improved, because the points do not lose in size, but in most cases will suffer in covering capacity. Regarding the latter, it might be advisable to intensify after a good washing, with mercury, and blacken with ammonia.

Instead of metol, amidol, glycin or hydrochinon may also be applied, but the former has given me some advantages. It works quicker than hydrochinon, and does not depend so much on the changes of temperature. During developing care should be had that no air bubbles form on the plate and prevent the action of the developer at these spots. Take a soft brush or a small tuft of cotton and run this over the plate, while the same is in the bath, or hold the plate, after taking it out of the plate-holder, for a few minutes under the faucet, and then develop, and continue until the picture is visible on the reversed side.

Direct autotypic views from colored originals, plastic objects like silver ornaments, porcelain and glassware, even pencil drawings succeed excellently, only we must not be frightened by the first little trouble, and must not set aside the dry plate after the first unsuccessful attempt.

The appearance of the dry negative, in comparison with a wet plate, should also not deceive us. Its printing quality is better than its looks.

All kinds of line work succeed particularly with dry plates, and I would recommend, to make a beginning with single line views, to become acquainted with the character and the advantages or disadvantages of this plate. The apparatus should also be carefully guarded against all vibrations. The dry plate is from four to five times more sensitive than a wet iodized silver plate, and is, therefore, more in danger of unsharp outlines, etc., by vibration.

The reproduction photographer often receives from amateurs prints made from totally overexposed negatives, and badly printed and toned, for reproduction. This is particularly the case with scientific objects, historical scenes, etc.

In all such cases I make a dry plate negative from such print, and from this again a copy which is generally more satisfactory than the original.

Depths appear which were not visible on the original, and the high lights are clear.

From such original a good autotype negative can, of course, be produced, and etcher and engraver have not the tenth part of work, they would have had with the bad original.

Translated by

HENRY DIETRICH.

SOME NEW METHODS OF DEVELOPING DAGUERREOTYPE PLATES AND OF PHOTOGRAPHING ON COPPER.

BY COLONEL J. WATERHOUSE, I. S. C.

(Continued from December number.)

THE mercury-box does not call for much remark. Those fitted with a yellow glass window are perhaps the most convenient for allowing the free examination of the image whilst the plate is in the box. It would be convenient to have the pan containing the mercury movable instead of being fixed, so as to be able to pour out the mercury without risk of spilling it about. Some of the disinfecting vaporizers might be adapted for this purpose.

Holders for the plates whilst being cleaned or polished are convenient, but not necessary for small plates, and the same may be said of the buffs which were the pride of the old workers, as I shall explain further on.

Plates.—It is not now easy to obtain suitable plates, but Mr. Child Bayley was able to get some for the Exhibition work, which, though not of high polish, somewhat scratched and many of them used before, have answered very well for the purpose of these experiments. They were French plates marked 30 or 40, to indicate the thickness of the silver coating. The thicker this is, the better. I may note that I have tried plain copper plates silvered with a cyanide silvering solution, but did not find them answer. A substantial coating of silver seems necessary, and I am inclined to think that for the best results a mirror polish is desirable.

Cleaning the Plates.—New plates I first clean with a cream of washed tripoli, spirit of wine and a little ammonia, just in the way of the glass

plates in the wet collodion process. All surface markings, etc., are taken out as far as possible, the tripoli is allowed to dry on the plates and rubbed off with a clean tuft of dry cotton wool. The plate is then slightly polished with a tuft of cotton and the finest jeweler's rouge, and the final polish given with a Selvyt pad dipped at one corner in precipitated chalk. For the polishing I find it convenient to put a leather glove on the left hand, holding the plate upwards in the hollow of it, and the polishing pad in the right hand, and work both hands rapidly backwards and forwards to get a good polish on the plate. This seems to me simple and as effective as the old method of buffing, which I found more liable to produce scratches, unless the greatest care is taken to use only the finest polishing powders and to guard against dust or grit falling on the plates or rubbers. For practical work it would be better to use a polishing wheel.

If a plate has once been developed with mercury, it cannot safely be used again until all traces of the mercury have been removed. This is best done by wiping off the developed image with a tuft of cotton, and then heating the plate gently over a Bunsen burner till it takes a uniform grey tint, care being taken against overheating. It can then be cleaned with tripoli and polished as above. I have also found it useful to wash old plates over with a solution of cyanide of silver containing 2 parts of silver nitrate and 10 parts of potassium cyanide in 100 parts of water. The old image should be polished off before applying the cyanide solution, which has a tendency to etch the surface.

In any case a good surface of pure silver and a fine polish are important factors toward success.

Sensitizing.—The iodizing is performed in the usual way by fuming over a pan containing iodine covered over with a few thicknesses of blotting paper to equalize the fumes. It is generally recommended to take the iodizing to the dark yellow stage, and this, I find, generally takes from forty to sixty or eighty seconds, according to temperature. For bromizing I have used the so-called bromide of lime made by adding bromine to slaked lime. This is convenient and gives good results, but latterly I have preferred to use either a saturated solution of bromine in water alone, or with the addition of hydrochloric acid in the proportion of 1 part acid to 8 parts of the solution of bromine. Both these solutions should be diluted for use in the proportion of 1 part to 40 of water, or a pale cherry color. On the whole I prefer the chloro-bromine solution.

The time for the plates to be exposed over the bromizing solution seems to be about two-thirds of that necessary for the first iodizing, and for the second iodizing about one-third or one-fourth; thus, if the time for the first iodizing is sixty seconds, the bromizing may be about forty seconds, and the second iodizing fifteen to twenty seconds. However, no definite rule can be given, and each operator must find out for himself the best conditions for working according to the circumstances. A rose color is generally recommended as being the most sensitive.

(To be continued.)

SOCIETIES



THE seventh annual exhibition of lantern slides was held by the Orange Camera Club early in November, and resulted in a large collection of excellent slides, well shown upon the screen. Vocal and instrumental music enlivened the evening, and the affair was altogether a very successful one.

THE Ohio Amateur Photographers' Association was organized in Fostoria, O., November 25th, with the following officers: President, Clarence H. White, of Newark; First Vice-President, A. E. Mergenthaler, of Fostoria; Second Vice-President, M. Allison Martin, of Toledo; Secretary, Miss Emma Spencer, of Newark; Treasurer, Andrew Emerine, Jr. Preparations are in hand to recruit the membership from amateur clubs throughout the State, and the movement is a good beginning in the right direction.

THE third annual exhibition of photographs by the Cleveland Amateur Photographers' Association was opened at the Case Library on Saturday, November 26th, continuing through the following week. The exhibition was a very successful one, diplomas having been awarded in Class 1 to C. H. White and H. Wildman, and honorable mention to Carle Semon, F. N. Cleland, H. M. Albaugh and R. A. Coggsell. Diploma in Class 2 was awarded to W. T. Higbee, and in Class 3 to F. P. Potter.

THE Jersey City Camera Club was lately organized with the following officers: President, Eugene Sutherland; Vice-President, Rev. R. M. Aylesworth; Secretary, H. Jacobson; Treasurer, William Dilts.

THE St. Louis Photographic Society has elected the following officers for the ensuing year: Robert E. M. Bain, President; John E. Holman, Vice-President; C. M. Alexander, Secretary and Treasurer.

THE eighth annual exhibition of the Toronto Camera Club was held early in the month of December, and resulted in bringing together some very fine examples of the best work of many of the English and American amateurs. A gold medal was awarded to Miss Mathilde

Weil, in Section A of the open class, and a silver medal to W. F. Slater, of London, England, in Section B, enlargements; silver medal, in Section D, members' classes, to Mr. Ernest J. Rowley, and another, in Section E, hand camera work, to Mr. A. R. Blackburn. In Section C, the silver medal went to Mr. R. G. Davis, of the Club, and the bronze medal to Mr. H. E. Farmer, of London, England.

The officers of the Club are: President, Dr. Edmund E. King; First Vice-President, W. H. Moss; Second Vice-President, H. M. R. Glover; Secretary, John J. Woolnough.

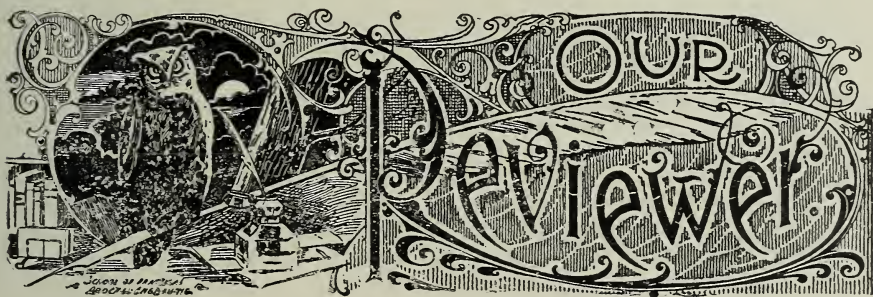


THE first number of ANTHONY'S PROCESS QUARTERLY will make its appearance on January 1st. It will be published in the interest of the professional photo-engraving trade.

Its object will be to keep all interested persons posted on the new and improved apparatus, machinery, chemicals, etc., which are constantly being developed.

An opportunity will be given those who wish to express their views as to what, in their mind, will be beneficial to all interested, such as maintenance of a higher standard of work, prevention of price cutting, etc.

News from the associations and unions will be published that will be of general interest and without the assistance of a press censor.



FROM the well-known publishers, Messrs. R. Lechner (W. Müller), in Vienna, we have received the second part of Professor Alexander Lainer's "Text Book of Photographic Chemistry," published in the German language, and in looking over the contents, cannot but find praise for it. A work of this kind requires, of course, a certain knowledge of chemistry, chemical conditions, etc., but the style of writing is such that the photographer will not only readily recognize the original root of each body and the way it is built up, but their behavior

and application in all the graphic processes is also clearly described. We can only hope that at some later time this work may be translated into the English language.

CANNON AND CAMERA has come to us from the publishers, D. Appleton & Co., and is a very attractive story of sea and land battles of the Spanish-American War in Cuba, camp-life and the return of the soldiers, described and illustrated by John C. Hemment, with an introduction by W. I. Lincoln Adams. This book is

made up of over two hundred full-page half-tone illustrations to describe and embellish the text, which is a very interesting running account of a photographer's experience during the stirring scenes of the war. It is a book which will be appreciated by lovers of good illustrations.

THE BRITISH JOURNAL PHOTOGRAPHIC ALMANAC AND PHOTOGRAPHERS' DAILY COMPANION, for 1899, is just at hand, consisting, as usual, of a vast number of advertising pages together with about four hundred pages of reading matter, the total number of pages in the volume being over fifteen hundred. The present volume marks the thirty-eighth yearly issue, and the articles are of live photographic interest and up to date.

"THE INTERNATIONAL ANNUAL OF ANTHONY'S PHOTOGRAPHIC BULLETIN, Vol. XI, for 1899. Edited by W. I. Scandlin. 320 pages. Aristo-Platino frontispiece, 40 full-page engravings, and 150 illustrations in the text. Paper cover, 90 cents, postpaid; cloth, \$1.45, postpaid. Published by E. & H. T. Anthony & Co., No. 591 Broadway, New York.

"Mr. Scandlin has not only gotten out a beautiful year-book in point of illustrations and typographical appearance, but he is in advance of the other American annuals in publication. He deserves congratulations on all. Unless we are in error, this volume contains more illustrations than any of its predecessors, a fact which will undoubtedly increase its already great popularity in this day of universal illustration. The articles, as far as we have read through the book, are as varied and interesting in theme as ever, although we could spare a few of the many papers descriptive of beauty spots abroad, which, in all human probability, not one reader in a hundred or a thousand, will ever have a chance to see or photograph. On the other hand, the value of the annual is enhanced by such papers as that by W. A. Eddy, on 'The Naval and Military Use of Kite Photography in Time of War'; 'Photography for Decorators,' by C. W. Canfield; 'Photographic Surveys and Surveying by Photography,' by J. H. Harvey—papers which add to our store of practical information, and which find a

proper burial place (we mean abiding place) in the year-books of photography.

"The Process Section contains many useful suggestions and modifications of methods already known, by men who speak from their practical experience in photo-reproduction. The Department of Tables and Formulæ has been revised and enlarged, so as to cover all branches of manipulation. Altogether the new volume is a marvel at its price, and should be seen and read by every photographer.—WILSON'S *Photographic Magazine*."

FIRST among the American annuals to follow the "International" this year comes Wilson's *Photographic Mosaics*, which is as full as ever of good things. Following its glance at PHOTOGRAPHIC PROGRESS FOR THE YEAR, which deals very ably with the subject, come forty-five original articles by such well-known men as Dr. Bakeland, Dr. Nichol, T. Perkins, M. B. Punnett, J. F. Ryder, H. W. Minns, B. L. H. Dabbs, E. M. Estabrooke and others, all embellished by more than sixty illustrations. The present volume marks the thirty-fifth year of *Mosaics*, which, like wine, seems to improve with age. The book is one that should be in the library of every photographic worker.

THE AMERICAN ANNUAL OF PHOTOGRAPHY AND PHOTOGRAPHIC TIMES ALMANAC for 1899 is a handsome volume of 370 pages, edited, as usual, by Walter E. Woodbury. The contributed articles and illustrations are of a very high order of excellence, and Mr. Woodbury is to be congratulated upon the result of his labors. Timely subjects, well handled by distinguished authors, and illustrated in a most artistic manner from the work of men who know what they are striving for, goes to make up the best volume in the series, of which the present is number thirteen.

A VERY attractive catalogue comes to the BULLETIN from Messrs. William G. Johnston & Co., of Pittsburgh, Pa., containing 48 pages, descriptive of photographic materials and supplies. It is gotten up in very attractive style, and is interspersed with hints and suggestions that will be appreciated by the amateur.

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PHOTOGRAPHED BY E. B. CORE, NEW YORK.

CHILD PORTRAIT.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

FEBRUARY, 1899.

No. 2.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA 1899 CONVENTION.

EVERY photographer in the country will be more or less interested in the report of the Executive Committee of the Photographers' Association of America, which appears upon later pages in this number.

By this report it will be seen that some important changes have been made in the general scope of the Convention for the current year, and it seems to the BULLETIN that all these changes are very much for the better. It is probably impossible for any one of us to form an adequate conception of the work and thought necessary to the Executive Committee in laying out the scheme of the Convention from year to year. Questions of all kinds are presented to them for consideration, analysis, and decision, and a multiplicity of details which to the ordinary photographer would be hardly comprehensible.

It will undoubtedly be a matter of great satisfaction to the fraternity that the Committee have tabled the motion made at the last Convention with reference to the establishing of a system of prizes based on cash instead of diploma and award, and the statement of the committee, that "this action was taken only after carefully canvassing the field represented throughout all portions of the country," will undoubtedly prove satisfactory even to those friends of the measure who felt that it might successfully be carried through.

The change made by the committee in dividing the territory represented into three, instead of five, divisions, as last year, is another important step which has undoubtedly been taken with due care and with the best interests of the association in view.

The new grouping will, of course, entail a larger collection of pictures in each class than obtained under the old, and this, in connection with the further innovation which prohibits the placing of any

name or markings on the exhibits which shall in any way reveal the identity of the exhibitor, will make possible a higher class of work in competition, and a much better standard of judgment than was to be looked for under the old system.

We believe that never in the history of photography has so much interest centered in the work of the association as will be manifested at the next Convention, and we predict that it will have a wider influence and a stronger hold upon the work of the future than any convention which has preceded it, in this country, or abroad.

If this result is to be accomplished, however, every photographer should be active and fully impressed with the importance of his mission in the photographic field, whether his territory be large or small. Starting in with the supposition that the judges are entirely ignorant of the source from which the work emanates, each photographer is placed upon an equality with his competing brethren, and the standard of merit which his work reaches will be judged purely and simply on its inherent value.

The association is to be credited with a vast amount of good work in the past, and the exhibits which have been held from time to time have done a great deal to raise the standard of art throughout the entire community.

Let it be said at the close of the coming Convention that the record of the past has been entirely eclipsed by the one just held. We believe this is easily possible if the competing members will take up the matter in the spirit which belongs with 1899. The year is opening with increased business opportunities, and the future looks brighter than it has for several years past.

OBITUARY.

WE learn, with deep regret, of the very sudden death of Mr. John Stalker, who, for many years, has been associated with the well-known firm of Horgan, Robey & Company, dealers in photographic supplies, of Boston, Mass.

For a number of years past Mr. Stalker has been the junior member of the firm, and the entire Eastern membership of the fraternity are familiar with his genial ways and many good points. He will be sadly missed by those who knew him and loved him during his busy life.

As a mark of respect to his memory, every photographic studio in Boston closed its doors during the hours of the funeral, which was very largely attended.



THE BULLETIN learns, with deep regret, of the death of Mrs. Harriet Kimball, wife of Mr. Walter B. Kimball, of Kimball & Matthews, of Columbus, O., who passed away after a very short illness following an attack of grippe. The hearty sympathy of every reader of the BULLETIN will go out to Mr. Kimball in his bereavement.

Items of Interest

READERS of the BULLETIN who had the pleasure of listening to Mr. H. Snowden Ward's lecture last year on "Shakespeare at Home" will be pleased to know that Mr. and Mrs. Ward expect to repeat their visit to this country, arriving here about the 20th of February, and that during their visit Mr. Ward will deliver his lecture, entitled "The Real Dickens' Land," and will also repeat his lecture of last year on "Shakespeare at Home."

This announcement will be of interest to literary and photographic societies who are looking for subjects and speakers who will interest and instruct at the same time. The stereoscopticon slides which will be used in these lectures are from negatives made especially for them by Mrs. Catherine Weed Ward.

A PARTICULARLY learned discourse in one of the daily papers, of recent date, on "photographic work," showing that it is one of the best paying employments for women, goes on to say that one of the prime reasons for its adaptability to this end is the fact that "it demands much less in the way of education than office work, and that it grants greater liberty and opportunities."

Members of the profession will certainly be glad to know that they are so highly favored as to belong to a class which is exempt from the drawbacks of the necessity of education! Will there ever be an end to this sort of thing?

AN idea, which is said to have originated with the professional photographers, contemplates the exchange of a collection of American photographs for corresponding sets by English photographers, to be exhibited in various cities throughout the States.

A very pertinent suggestion in this connection, is that prominent camera clubs follow the example set by their professional brethren and inaugurate a system of exchange, either of pictures or slides, with prominent clubs abroad. This will enable workers in both countries to obtain a better idea than is now possible of the various methods obtaining in each country, and should be of mutual advantage.

WE learn, as the BULLETIN goes to press, that Mr. John A. Tennant, who, for some years past, has been associated with Wilson's *Photographic Magazine*, has severed his connection with Mr. Wilson, and has commenced business in this city as a publisher of photographic and general literature. In this new business Mr. Tennant is joined by Mr. W. E. Ward, one of the founders of *The Photogram*, of London.

The firm of Tennant and Ward will issue, under the title of *The Photo Miniature*, a monthly magazine, which, instead of competing with the present photographic journals, will occupy a field distinct

from, and not clashing with, the older papers. The firm will also make a specialty of handling all photographic literature. The best wishes of the BULLETIN are extended to the new concern, who will doubtless be warmly welcomed to the field by the fraternity at large.



PHOTOGRAPHY and process reproduction scored a veritable hit during a recent strike at Brussels in one of the paper offices there. It seems that on the occasion in question the compositors and pressmen "went out," leaving a 16-page paper without facilities for publication, until some bright mind conceived the idea of "setting up" a copy of the paper on a typewriter. The entire matter was written on large sheets, illustrations pasted on corresponding cardboard in size proportionate to the finished page, and the whole then reduced by photography to the required size and printed from etched zinc plates.

This illustrates the facility with which photography can be utilized, and constitutes quite a remarkable instance of enterprise.



THE AMATEUR POINTER, a magazine devoted to the interests of the beginner and the amateur photographer, is about to be published by our publishers, Messrs. E. & H. T. Anthony & Co., the first number bearing date of January of the present year. The purpose of the journal will be to convey to the beginner in this work a general idea of the methods to be followed in photographic manipulations, and also to carry to the more advanced workers literature that will be of interest and benefit to him in the higher plane of photography.

The Amateur Pointer will be published monthly, and will be under the editorial management of Mr. W. I. Scandlin. The price per year is 50 cents, and it is hoped that a large number of amateurs will find it to their interest to subscribe to the journal.

Its policy will be broad, and its "get up" as artistic and effective as that of any in the field.



As has been previously noted in the BULLETIN, *An Index of Standard Photograms* is the title of a work which *The Photogram*, Limited, London, is compiling. Mr. H. Snowden Ward is the moving spirit, and, as the title suggests, he aims at listing the work of all photographers whose productions, through individuality or by specialty of subject, may at any time be in request, either by business men or private collectors.

The index will be divided into sections dealing with professional illustrators, the principal photographic publishers, celebrities, genre pictures, landscapes, etc. Some of the sections will be further sub-divided, and cross-references and an alphabetical index will render search easy.

Special attention will be devoted to the less known but accessible photographs in national collections or in the hands of scientific bodies or private individuals; and information facilitating the obtaining of lantern slides and process blocks will be included. The book will include chapters dealing with the important question of copyright, both in this country and abroad, and with other matters of interest.

The great advantage of such a work is obvious, and we ask our readers to co-operate with the publishers in insuring its complete success by forwarding to the American representative particulars of any series of photographs of general interest which they may possess.

The American section is in the hands of W. E. Ward, 160 Broadway, New York, to whom all information should be addressed, and who will be pleased to furnish any further information on request.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA— MINUTES OF MEETING.

JAMESTOWN, N. Y., January 9, 1899.

Meeting called to order at 4.30 p. m., with President Guerin in the chair, members of the Executive Board all present. Secretary and Treasurer's report for 1898 was read. Mr. Stein and Mr. Barrows appointed Auditing Committee to audit the Secretary and Treasurer's accounts.

Committee reported accounts correct. Treasurer's bond presented and accepted.

Moved and seconded that the President and Treasurer be appointed a committee to confer with Mr. Broadhead in regard to renting of auditorium and all privileges connected therewith. Adopted.

Moved and seconded that a committee of two be appointed to take charge of issuing a souvenir of "Genre" studies. Adopted.

Moved and seconded that the present system of separating the territory of the Association into five divisions be abolished. Adopted.

Moved and seconded that the territory be divided into three divisions, as follows :

Eastern.—Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, Pennsylvania, Maryland, District of Columbia, New Jersey, Ohio, Illinois, Indiana, Michigan and Wisconsin, and the Dominion of Canada and Newfoundland.

Western.—Washington, Oregon, California, Nevada, Utah, Idaho, Montana, Wyoming, Colorado, New Mexico, Arizona, Indian Territory, Kansas, Nebraska, South Dakota, North Dakota, Minnesota, Iowa, Missouri and Oklahoma.

Southern.—Arkansas, Texas, Louisiana, Mississippi, Alabama, Virginia, West Virginia, Delaware, Tennessee, Kentucky, North Carolina, South Carolina, Florida and Georgia. Adopted.

Moved and seconded that the 1899 convention be held July 17th to 22d, inclusive. Adopted.

Moved and seconded that the recommendation of the Committee, suggesting a system of cash prizes, and which was referred to the Executive Board with power to act, be laid upon the table. Adopted.

Moved and seconded that the Committee on Prizes be limited to \$150 for the purchase of the Grand Portrait and Grand Genre awards. Adopted.

Committee appointed to confer with Mr. Broadhead reported that the Auditorium at Celoron, with the additional privileges heretofore enjoyed, can be had at the same rates as charged for the 1898 convention.

Moved and seconded that the necessary steps be taken to secure the Auditorium in accordance with above report. Adopted.

The following communication from the American Aristotype Company was read :

"Mr. F. W. Guerin, President of the Photographers' Association of America and Gentlemen of the Executive Board : Judging from the

large attendance and the great interest manifested at the sessions of the School of Photography during previous conventions, we are convinced that your members have found them profitable, and believe that they would like to have the school continued. We wish to state that we shall do so if it does not conflict with any of your coming arrangements. We shall be pleased to confer with your programme committee that the sessions may be arranged to the best advantage of all concerned.

“Very truly yours,

AMERICAN ARISTOTYPE COMPANY.”

Moved and seconded, that the offer of the American Aristotype Company be accepted, and that the thanks of the Board be tendered them, with the assurance that they recognize their school as a most valuable aid to the success of the Convention. Adopted.

The following committees were appointed:

Medals and Buttons—S. L. STEIN, F. R. BARROWS.

Transportation and Hotels—GEORGE B. SPERRY, GEORGE W. VARNEY.

Exhibits and Decorations—S. L. STEIN, F. R. BARROWS.

Printing—GEORGE B. SPERRY.

Programme—F. W. GUERIN, GEORGE B. SPERRY.

There being no further business, meeting was adjourned subject to the call of the President.

GEORGE B. SPERRY,

Secretary.

The above report of the meeting seems prosaic enough, and gives no indication of the long debates and discussions some of the questions brought up. Every member of the Board gave frequent displays of his oratorical powers, and sometimes in a very forcible and vigorous manner.

The differences were of minor importance, however, and the minority always yielded gracefully when defeated. All were in perfect accord with the general policy of the administration, and each member has taken up his duties with a vigor and an enthusiasm that is sure to produce good results.

Perhaps some explanation is due the Association in regard to the recommendation that cash prizes be offered in place of the usual honorary awards. Your Executive Board found from inquiries directed to all parts of the country that the sentiment of the members was very decidedly against such an innovation. So the matter was tabled, as per item in the report.

The list of awards was arranged after the most careful consideration and a close study of the statistics of entries and awards for the past few years.

LIST OF AWARDS.

Grand Portrait Class.—Six pictures, 16 inches or larger. First award (to be chosen later); second award, diploma. Competitors cannot enter any other class, except Grand Genre and Miniature Classes.

Grand Genre Class.—Three pictures, 16 inches or larger. Subject to be chosen by the photographer, the title to be appropriately inscribed on the picture. First award (to be chosen later); second award, diploma. Competitors cannot enter any other classes, except Grand Portrait and Miniature Classes.

DIVISION CLASSES.

Competitors can enter but one of the three division classes, but can, in addition, enter any two of the general classes.

Class A.—Twelve pictures, 13 inches or larger. First award, gold medal; second award, silver medal; third award, diploma.

Class B.—Nine pictures, 9 inches or larger. First award, silver medal; second award, bronze medal; third award, diploma.

Class C.—A rating competition. Twelve cabinets only. Must be framed in one frame. To the exhibit receiving the best rating, silver medal, and to all worthy exhibits, a bronze medal.

GENERAL CLASSES.

For open competition, for all members of the Association.

Miniature Class.—Eighteen pictures, smaller than cabinets, suitably framed. First award, gold medal; second award, silver medal; third award, bronze medal.

Group Class.—Four pictures, 9 inches or larger. First award, silver medal; second award, bronze medal; third award, diploma. Groups must not be combined from separate negatives.

Landscape Class.—Nine pictures, 9 inches or larger. First award, silver medal; second award, bronze medal; third award, diploma.

Marine Class.—Nine pictures, 9 inches or larger. First award, silver medal; second award, bronze medal; third award, diploma.

Interior Class.—Nine pictures, 9 inches or larger. First award, silver medal; second award, bronze medal; third award, diploma.

Commercial Class.—Twelve pictures, 9 inches or larger. First award, silver medal; second award, bronze medal; third award, diploma.

Foreign Class.—Best collection of photographs of any size, framed or unframed, to be delivered to the association free of charge. First award, silver medal; second award, bronze medal; third award, diploma.

RULES AND REGULATIONS.

1. No exhibitor can compete in more than three classes.
2. All competitors must be members of the Association, except in foreign class.
3. When one dimension of picture is given, it applies to the entire length or breadth of picture in all cases.
4. All exhibits must be framed, without glass. In framing exhibits in Class C, or in Miniature Class, put all pictures in one frame. Any exhibit not framed will not be hung.
5. All exhibits must be delivered in Jamestown, N. Y., care of the Photographers' Association of America, by July 9th, and all charges paid.

6. Applications for space to close positively Monday, July 3d. Applications for space in this department must be made to S. L. Stein, First Vice-President, Photographers' Association of America, 126 Wisconsin street, Milwaukee, Wis.

7. All exhibits of pictures must be addressed S. L. Stein, First Vice-President, Photographers' Association of America, Jamestown, N. Y., and all charges prepaid. In case charges are not paid, the association will not accept them from the express company.

8. Exhibits for dealers and manufacturers' department to be shipped to George B. Sperry, Secretary, Photographers' Association of America, Jamestown, N. Y., charges prepaid, and must be placed in position by July 15th. Have your box covers screwed instead of nailed. Your home address must be marked on under side of cover for return of pictures. Association will not be responsible for packages not so marked. Put screw eyes and picture wire for hanging in box.

10. All boxes and packages will be accepted at any time previous to July 15th, so that photographers need not feel any uncertainty about the safety of their goods. No exhibits will be allowed to be removed from the hall until the close of the Convention.

11. No exhibit shall contain any name or markings that shall, in any way, reveal the identity of the exhibitor.

12. All entries for competition must be for prints from negatives made since the last Convention.

EXTRACT FROM CONSTITUTION.—MEMBERSHIP.

SEC. 5. Any person who is eligible may become a member of this association by making application to the Treasurer, and by paying an initiation fee of \$3 and annual dues of \$2 in advance.

SEC. 6. Employees will pay into the treasury their annual dues, the sum of \$2. No initiation fee will be required. Application for membership should be made to George W. Varney, Treasurer, Photographers' Association of America, 3937 Drexel Boulevard, Chicago.

Signed,

F. W. GUERIN,
S. L. STEIN,
F. R. BARROWS,
GEORGE W. VARNEY,
GEORGE B. SPERRY,
Executive Committee.

It is reported from abroad that Dr. Becquerel has announced to the Academy of Sciences a discovery of a new chemical substance having a very close affinity to Barium. The discoverers of this substance, Messrs. Curie & Bremona, have given it the name of Radium. Its sensitiveness to light action is so great that it is said to take photographic impressions. We shall look with interest for the developments in this connection.

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FROM PHOTO BY ELLIOTT & FRY, LONDON.

M. Radeau

WILLIAM H. BADEAU.

THE BULLETIN takes pleasure in printing the following extract from the Commemorative Biographical Record of Dutchess and Putnam Counties, N. Y., referring to one of the most prominent citizens of his county, and one who was in close touch with the BULLETIN and the business interests of its publishers for many years in the past. To the older subscribers of the BULLETIN, the perusal of this sketch will doubtless waken many memories of the times gone by, and remind them again that

“The old order changeth,
Yielding place to new.”

“The subject of our sketch is a descendant of French Huguenots. A numerous band of these, including the names of Flandreau, Coutant, Badeau and many others, left La Rochelle, France, and founded New Rochelle, a suburb of New York City. Elie Badeau, on his arrival there in 1708, purchased a valuable estate, including 120 acres of land, still a family holding (owned now by heirs of the late Hon. Albert Badeau).

“Two generations later, and before Horace Greeley’s ‘Young man, go west,’ was given to the world, John Badeau, of New Rochelle (descendant of Elie), went north, acquired a large tract of land, and in 1775 located at Mahopac Falls, in Putnam County, N. Y. One of the sons of John Badeau was Isaac Badeau, Sr. His son, Isaac Badeau, Jr., married Elizabeth Hart, also of Mahopac Falls. Their children were: Gilbert H. (deceased), William H. (our subject), Matilda S., and Joseph N. They also ‘went North,’ locating in Dutchess County in 1846.

“The restless ambition of W. H. Badeau (second of the foregoing) begat aspirations for something beyond the field of possibilities in sight to him in Fishkill surroundings, and he accepted an appointment in a wholesale fancy dry goods house in the downtown section of New York City. The proprietor, G. S. Ely, was a brother-in-law of Colonel Richard M. and Robert Hoe, the great inventors and builders of lightning printing-presses. Mr. Badeau was more fortunate than many young men resorting to great cities, in that he was successful in arranging residence with the proprietor in his own home in Brooklyn. He became at once actively interested in Sunday-school, choir and church work at the Clinton Street Presbyterian Church, Brooklyn Heights, whose pastor was Rev. Ichabod S. Spencer, D. D., author of ‘A Pastor’s Sketches’ and other works. After seven years passed in the business house and very delightful home of G. S. Ely, Mr. Badeau arranged connection with the renowned firm of E. & H. T. Anthony & Co., No. 591 Broadway, New York, manufacturers, importers, publishers and wholesale dealers in every class of photographic requisites.

“Transferring now his residence to the Seventh Ward, New York City (at that time a pleasant quarter), and making as his church home the Allen Street Presbyterian, Rev. W. W. Newell, D. D., pastor, was afterward elected a member of its board of trustees. Mr. Badeau was at this time a member of the Twenty-second Regiment, New York City, which was ordered to temporary service in Pennsylvania, at the

time of the battle of Gettysburg, and at the same time he volunteered to put a man in the army at his own cost of several hundred dollars.

"At one stage during those troublous war times Mr. Badeau served the United States Government, credentialed, to wit :

"BEARER OF DESPATCHES.

"No. 22.

"LEGATION OF THE UNITED STATES OF AMERICA AT LONDON.

"To all to whom these presents shall come, GREETING.

"KNOW YE, that the bearer hereof,

"WILLIAM H. BADEAU, Esq.,

"is proceeding to France bearing Despatches from this Legation, to the United States Legation at Paris. These are, therefore, to request all whom it may concern, to permit him to pass freely without let or molestation, and to extend to him such friendly aid and protection as would be extended to Citizens and Subjects of Foreign Countries resorting to the United States bearing Despatches.



"In testimony whereof, I, CHARLES FRANCIS ADAMS, Envoy Extraordinary and Minister Plenipotentiary of the United States of America at London, have hereunto set my hand and caused the Seal of this Legation to be affixed this Twenty-third day of April, A. D. 1862, and of the Independence of the United States the 86th."

Charles Francis Adams

"The business of E. & H. T. Anthony & Co. became a rapidly increasing one, and had for its field every State in the Union, the Canadas, Mexico, West Indies, Central America, South America, Australia, Europe, and even China. At this juncture, and as showing the then course of events, we copy from a little historical brochure issued by E. & H. T. Anthony & Co. not long since :

"After a time these gentlemen found it impossible to look after all the interests of the firm, and William H. Badeau, after being associated with the Brothers Anthony for several years, was admitted to the firm, and became the representative of the house in Europe."

"Mr. Badeau made many voyages across the water, both before and after the formation of the copartnership. By the way, one crossing was by the monster steamship *Great Eastern*, which was one-eighth of a mile in length. It was a smooth August trip, eighteen hundred merry-making souls being on board.

"It soon became necessary that Mr. Badeau should remain permanently abroad, and he accordingly established his residence by turns at the capitals of the Old World—Vienna, Berlin, Paris and London—making occasional tours through Italy, Austria, Germany and France, also through all parts of the United Kingdom; and in mid-summer (for recreation) to the Orkney and Shetland Islands.

"Whilst residing at the Austrian capital, and during the Vienna Exhibition, Mr. Badeau (his firm co-operating) set his heart upon and addressed himself assiduously to the capturing, in that international contest, of the 'Medal of Progress.' There was only one prize medal of this rank, and that was to be competed for by the wide world.

"After the close of the World's Fair he shipped part of his exhibit from Vienna to London, and entered it at the annual exhibition of

British Photographers. As setting forth the outcome of his efforts to carry off honors at Vienna, we quote from the *British Journal of Photography* of October 31, 1873, a part of its serial critique upon that autumn exhibition, viz.:

" 'And first of all, let us accord a hearty welcome to a firm as well known in this country as it is in America. We mean that of Messrs. E. & H. T. Anthony & Co., of New York, a firm which, although young, so far as mere years are concerned (seeing that it has only recently entered upon its fourth decade), is yet as old as it can possibly be, finding, as we do, that it dates from the introduction of photography in 1843. This establishment is so colossal in its extent and ramifications as to occupy 40,000 square feet of floor room; and its industries are so numerous and varied as to necessitate the services of two hundred skilled work people and forty warehousemen. We are glad to see so eminent a firm contributing to our annual collection of pictures, knowing what personal power they possess in securing American representation; for much is gained in many ways by the international advances toward each other of two great nations so intimately connected in lineage and language, thus promoting the mutual interchange of whatever is exceptional and valuable in the pursuit of our art-science as practiced in both the Old and New Worlds. Let us hope that through the friendly agency of this, the largest photographic firm in the world, and through the cordial services of Mr. William H. Badeau, the English resident partner, American photography will henceforth be adequately represented at our annual exhibitions. It is fitting that we should here remind our readers that the senior member of this great firm, Mr. Edward Anthony, has generously offered \$500 in prizes to be contested for in February next; and as the artistic encounter is an international one, we urge upon the photographers of the United Kingdom to commence the preparation of such works as will enable our trans-Atlantic brethren to see that, although the progressive proclivities of their nation have secured for the firm to which we have referred the only and much valued "Medal of Progress" awarded at the Vienna Exhibition, yet, that Englishmen will retaliate by wresting from our American friends, if they can, the munificent prizes offered by Mr. Edward Anthony. We should have been pleased to have seen the "Medal of Progress" sent to England; but as the fates or jurors otherwise decided, it only remains for us to congratulate the fortunate recipients of this coveted award.' "

"During his whole stay abroad, whether in visit or in residence, Mr. Badeau was the foreign contributor to the columns of Anthony's Photographic BULLETIN over the *nom-de-plume* 'Viator.'

"Fifteen years with the firm of E. & H. T. Anthony & Co., he, after a much varied and exceedingly pleasant experience, and having acquired a competency, retired from the firm. (The portrait accompanying this sketch is a copy of the photographic souvenir made on that occasion.)

"Personally, Mr. Badeau is a gentleman of simple habits, culture, well educated, lover of science, research, art. To his tastes the whole copartnership career was contributive, bringing him into hand-and-hand intimacy with art of both worlds.

"Relinquishment of the bustling activities found installation of appreciations for the fruitions of post commercial relations. Pleasure travel, the diversified diversions and numerous private affairs have made his life (since retiring) one of busy leisure, he residing by turns in Europe, New York City, State of Iowa, and the counties of Schoharie, Rockland and Dutchess, in New York State. Mr. Badeau has many interests in the West. He is a member of the Board of Directors and Vice-President of the First National Bank of Glidden, Iowa."

ABOUT THE DIFFERENCE OF PRINTS ON CARBON AND SILVER PAPER.*

BY H. W. VOGEL.

ALMOST every photographer, who has ever made carbon prints, will have observed, that one and the same negative gives different results in both processes. For my experiments I had a pretty portrait negative of a lady in white silk damask dress at my disposal. On the train of the dress were numerous white embroidered flowers upon a white ground. The latter could be recognized on the negative, although pretty well covered. In the silver positive nothing could be seen of this, and it required prolonged printing—masking in the meantime the other parts of the negative—to succeed even tolerably in bringing them out.

This was not necessary in the carbon print. A normally printed-out picture showed, without being overprinted, the bright details of the train completely. This observation has been confirmed by many others, and it is, therefore, perfectly correct to say, that a carbon print will give handsomer and clearer lights and furnishes two or three grades of tone more than a silver print.

Still this is strange. The same quantity of light, falling through the same negative upon both papers, has evidently the same gradation of brightness. According to general theories, they should furnish the same tone, no matter whether on silver or carbon paper. But practically we are taught that this is not the case.

How can this be explained?

The reason for it is to be found in the different color-sensitiveness of the several papers. Carbon paper, which contains chromic acid, absorbs on account of this the light-rays violet, blue to green; silver paper, however, only violet and ultra-violet. The white rays now, by passing through more or less dense films of the negative, suffer a weakening or reduction, and this is particularly the case with violet or ultra-violet, owing to the generally light yellow tint of the negative. The result is, therefore, that in its passage through the negative, that light is reduced mostly, which acts best upon chloride of silver. The details in the dense parts of the negative remain, therefore, completely unaffected on the silver paper.

With the carbon paper, which absorbs even light blue and green, and is, therefore, sensitive for these, it is different. But these rays are just the ones which were much less reduced by the negative. They retain, therefore, to a great extent their action, and admit a printing of the denser lights, which in the silver print are excluded.

Translated by

HENRY DIETRICH.

THE editorial and business offices of Wilson's *Photographic Magazine* have been removed from 853 Broadway to a more convenient location, at 289 Fourth avenue, New York.

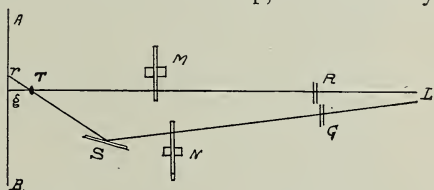
*This interesting article was written by Dr. Vogel a few days before his death.

A NEW FORM OF PHOTOMETER.

BY REV. F. C. LAMBERT.

MR. JAMES CADETT, the eminent authority on color photography and kindred matters, has recently designed a new form of photometer, especially designed to measure the relative brightness of two patches (side by side) of different colors, such, for example, as red and green. The apparatus was shown in action at a recent meeting of the London Camera Club, and evoked general expression of admiration, among those present being Captain Abney, who expressed distinct approval of the apparatus. The essential features of the apparatus are of such a simple nature that any one possessed of a little patience and some slight skill, with common tools, may construct a machine for himself. The accompanying diagram shows in ground plan arrangement, the essential features. At the right we have L , a convenient source of light, *e. g.*, the carbons of an arc. This light is, of course, enclosed in a suitable box, so that light only passes in one limited direction, from right to left, through a small opening in the lamp chamber. Part of this light passes through R , a bit of red glass. The rest of the light passes through some other colored glass, *e. g.*, green glass, at G . AB is a white screen. If G be covered up, so that only the red light through R reaches the screen, it would be uniformly lit by red light, with the exception of a small shadow patch cast by T , a small opaque rod just in front of the screen—just behind T —*i. e.*, at g ; there would be a black shadow, the rest of the screen being red.

Now, the light which passes through G , the green glass, is made to fall at a very oblique angle upon a suitable reflector, S . From this it is thrown upon the screen in the direction STr . Suppose, then, we cover up the red glass R . The screen AB is now only illuminated by green light cast by the reflector, but T , the rod, will cast a dark shadow at r . If, however, both R and G be uncovered, what happens is this: The red rays, LRT , cast a black shadow at g , which is illuminated by green light reflected from S , while the green rays along LGS and STr cast a black shadow at r , which, in turn, is illuminated by red rays from $L R$. Thus we have, side by side, a red patch at r and a green patch at g , surrounded by a mixture of red and green light. At M and N are revolving sectors, which can be adjusted at will, so as to allow more or less light to pass through them. To use the apparatus, any two transparent, colored screens are placed at R and G , and the amount of light at r and g are adjusted by the screening sectors at M and N until the two differently colored patches appear equally bright. The angular openings in the sectors are then observed, and the experiment repeated once or twice to reduce the error of observation. [To show how uniform the observations are, the present writer may say that, on first seeing the apparatus, three trials were made, and gave angle readings 15 , $14\frac{1}{2}$ and 15 degrees.] The



reader will no doubt surmise correctly that the whole apparatus is enclosed in a suitable lidless box, the observer looking downwards upon the apparatus generally. It should be mentioned that, contrary to what one might reasonably suppose, there is no need whatever to work in a darkened room. Readings are found to be quite the same whether working in a dark room or one with a considerable quantity of light. It is, however, essential that whatever light falls upon the screen (other than that through R and G , of course), shall be quite evenly distributed over the screen AB . If one side of AB be more strongly lit than the other, then the observations will at once be affected. Mr. Cadett laid great stress upon this point, and, with a view to protecting the screen AB from any uneven stray light from L , he introduces between RG and AB two opaque diaphragm screens with suitable openings. As already said, the red and green patches at r and g are surrounded by a mixture of red and green light. This surrounding mixture is, however, distracting, and it is much better to surround the two patches by blackness—absence of light. To evade the commonly known trouble of reflected light, by using a cylindrical rod at T , it was suggested by Captain Abney that a flat strip of metal (zinc), properly blackened (camphor black), got over this difficulty. The reflector at S must be either speculum metal or quite flat glass, silvered on the front surface.



GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

DIAPOSITIVES for Enlarging and Reproduction Purposes.—If an enlarged negative is to be made from a small negative, it is in most cases more rational to first produce a diapositive by contact and enlarge this, than to enlarge the small negative directly upon a diapositive plate, and then make an equally large negative from the diapositive. If in such cases the diapositive is produced from the small negative in the ordinary way—that is, by development of the chlorobromide of silver plate with oxalate of iron or an alkalic developer—as a rule, a difficulty will appear when enlarging the same in the camera, which has its foundation in the color of the diapositive.

Most of the developers give, under normal conditions, a warm, greenish tone, which absorbs the effective actinic light to a great extent. The consequence is, that at exposure the covered parts in the diapositive remain behind, or if the exposure is sufficiently continued to bring out the details in the shadows, that the high lights will become too dense. The result is then an enlargement, too hard and too rich in contrast. To avoid this defect, we must try to give the diapositive, which is to be enlarged, a neutral, that is an actinic, effective tone. It is difficult to reach this by simple development, as even those developers, which under some conditions furnish a bluish black to black tone, behave differently according to color and density, condition of light, etc. It can be done by developing the diapositive pretty thin, bleaching the same with mercury after fixing, and then again develop-



PHOTOGRAPHED BY E. B. CORE, NEW YORK.

CHILD PORTRAIT.

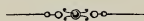
originates, therefore, a picture, consisting of nitrate uranium, but practically invisible.

If the same is now put into a liquid, reacting upon the nitrate uranium, for instance, a solution of ferrocyanide of potassium (yellow prussiate of potassium), the dark red ferrocyanuran will form in the film by double decomposition, and a strong, positive copy will result in the relative color. Now, as will easily be understood, the plate saturated with nitrate uranium not having been washed before it comes into the ferrocyanide bath, a small quantity of the red ferrocyanuran will form irregularly on the surface of the film, which at first may leave the impression of a failure; but this surface deposit can easily be removed by a short rinsing or rubbing with a soft tuft of cotton and water. The superfluous nitrate of uranium can also be removed from the surface of the film with blotting paper, before immersing it into the ferrocyanide solution. The foregoing illustrates the principle of the process, and practically one may proceed in the following way:

Liberate a bromide of silver gelatine plate from the silver by bathing in an ordinary fixing bath. Wash well and sensitize after drying in a 4 per cent. aqueous solution of bichromate of potassium. After drying (which has to be done in the dark), it may then be exposed under a diapositive. In bright daylight from two to three minutes is sufficient. The exposed plate is then washed, until the film appears completely colorless (in this state a delicate picture in relief is seen), and after this it is put for a quarter of an hour into the first salt solution. A concentration of from 5 to 10 per cent. is preferably selected for the latter. Concerning the solutions required for the several cases, the following table will give sufficient information for selection:

First solution.	Second solution.	Color of precipitate.
Chloride of barium.	Sulphate of soda.	White.
Nitrate of uranium.	Ferrocyanide of potassium.	Dark red.
Sulphate of copper.	“ “	Light red.
Chloride of iron.	“ “	Blue.
Chloride of cadmium.	Sulphate of soda.	Yellow.
Acetate of lead.	“ “	Black.

By means of the white precipitate, very pretty pictures can be produced photographically, which resemble matt etchings, the same as obtained by application of fluoric acid.—Prof. R. NAMIAS.



The giant telescope of the Potsdam observatory, which is expected to be finished by the first of July of this year, and is intended for astrological work, will have a length of 32 feet. It will be provided with two lenses, of which the smaller one has a diameter of 50 centimeters. The larger one, to be used for the photographing of the stars, will have a diameter of 1 meter. The lenses are made by C. A. Steinheil Sons in Munich, and will have a combined weight of about 1,300 pounds.

To strip the film from a broken negative and transfer the same to another plate, proceed as follows: Put the negative, film side down, upon clean blotting paper, brush a solution of rubber in benzine over the crack; place a strip of thin transparent paper on top of this, and let it dry. After a while coat the whole reversed side of the negative with celluloid varnish (zapon varnish). The negative so prepared can be stripped in the well-known way, preferably by treating with alkalic formaline solution. By pasting up of the cracks, a penetrating of the formaline solution through the same is prevented, as otherwise an uneven expansion of the film would take place.



RETOUCHING FROM ART AND TRADE STANDPOINTS.

THE following article, by Mr. C. H. Hewitt, which appeared in the December number of *The Practical Photographer* (London), strikes a note of interest to the professional photographer of this country, with an emphasis equal to that applying to the English profession. It serves also to show how widespread is the tendency to drive out of photographic work of to-day those elements of strength, character and personality which are essential to a portrait, and to substitute for them the meaningless finish and smoothness that is supposed by some to be the necessary accompaniment of a picture.

Two very different standpoints, it must be allowed! We sometimes wonder whether it is wise to seek a *via media*, or if it would not be better to supply the ordinary public with the billiard-ball finish they want, regarding the matter as a purely commercial affair, and reserve the true portrait with its true retouching for the exhibitions and a few cultured and appreciative clients. That is the mental attitude when our best efforts to do enough retouching to satisfy the untrained, and yet not so much as to displease the cultured, are met by suggestions of incompetence.

When we think of the exquisite delicacy of gradation in a softly modelled portrait negative, we are appalled at the temerity of the retoucher who undertakes to put over it all a wonderful "flesh-like stipple." That the public want it is his excuse, of course; we only wonder whether the public asked, or the photographer supplied, in the very first instance. The question is not, however, what was done, but what is to be done now. We have no doubt the majority of commercialists will continue as they have begun, producing that which has the readiest sale. If such regard photography simply as a means of money-getting, just as they would the sale of shoddy, then no more remains to be said to them. They are, perhaps, perfectly honest, for the public buys with open eyes.

We now write for those who are more inclined to look to the future of photography, both as an art and as a business; for those who, though they earn their living, are yet content to sacrifice something for the present, that they may improve the public taste, and the future of what might be a noble profession.

Although retouching is really intended to modify the shortcomings of the gelatine plate, it must be admitted that it is a great power in the photographer's hands on occasions when, through fault or misfortune, the negative is below the average. This is, undoubtedly, one of its trade aspects. The negative was possibly made under such circumstances as would not be chosen by the worker who pleased himself alone. Being made, however, the best has to be done that is possible, and that best often means penciling in the whole of the shadows or building up the high-lights. There is no alternative but the destruction of the negative and a resitting, and this

may not always be advisable or possible. But even this "making the best of a bad job" does not necessarily imply that the first thought on seeing the print from the negative shall be—retouching. It is, after all, only modifying the shortcomings of the plate in an extreme case, or making amends for previous errors of lighting or exposure, and if judiciously and thoughtfully done no likeness or character need be lost. So much for retouching as something to fall back upon in extreme cases, but what about the majority of portrait negatives?

From Mr. Bergheim's untouched "Cinderella" of a few years ago to the average commercial portrait is a far cry, yet our title compels us to cover the ground. We cannot work for the public with the Dallmeyer-Bergheim lens. Mr. Sutcliffe has put into words the experience of all professional workers who have aimed high. "Any attempt," he says, 'at thoughtful focusing is met by the demand for 'clearer photographs.'" And unfortunately the sharper focusing not only gives "clearer photographs," but emphasizes every little irregularity of surface and variation of color. We are far from saying that photographs from such sharply focused, untouched negatives are artistic or even truthful. When the lighting is mild and soft to a degree they still produce an impression of "dirt" to which the sitter very rightly objects. The logical conclusion, therefore, is that something must be done to render the impression more truthful, and we do not suppose any but the most advanced purist would object to the few touches necessary to correct the falsity of tone rendering or to soften the perhaps exaggerated wrinkle or blemish.

Many, however, would not go further than this, being satisfied that the impression was a fairly truthful one; but for our own part we should not feel inclined to limit the work on a portrait negative to the mere correction of the false. It has been said that a beautiful untruth is preferable to an ugly truth, at all events in art. Granted that in posing and lighting the very most has been done to secure the best aspect and emphasize the beautiful, there are few faces so perfect but that there is some flaw more or less visible. Some little while ago we were talking to a photographer of our acquaintance about the negative of a lady, the pose, bust, three-quarter face, and the lighting, what is popularly called "Rembrandt." Owing to the smiling expression and the rather prominent cheek-bones—though the face was by no means thin—the cheek, catching the strongest light and thrown up against a dark background, presented a swollen appearance. We suggested that the judicious use of the knife would improve the contour, but our friend objected "that it wouldn't be true," "Never mind," we replied, "it would be more beautiful, and neither character nor likeness would be lost." Ultimately we were allowed to take the negative, and made the suggested alteration to our friend's satisfaction, after which he himself adopted the use of the knife. Like everything else that has good in it, however, this sort of thing is open to abuse, and we cannot approve of the 24-inch waist on the lady who evidently weighs 14 stone.

From what we have said it will be seen that we look upon retouching as something which enables us to remove blemishes, to correct falsities, or even to modify the picture, if that can be done to its improvement without destroying character and likeness. When we have said that, it is easy by a process of subtraction to find out what it should not be. When the great photographic-buying public is educated sufficiently to understand that texture and modeling, being indicative of character, are as important as outline in the production of likeness, we may, perhaps, hope for rational retouching. It will, we are afraid, be some time before that comes to pass, for the conventional photograph is only spreading heresy and educating the purchaser in the wrong direction. It may be, though, that a reaction will ensue, and, disgusted with the vapid and expressionless portrait, the sitter will employ the services of a Hollinger, who will send out unretouched pictures. Could the everyday client only once realize that the photographs he buys do not enable him "to see himself as others see him," he would, perhaps, perceive the folly of the false pretences of the picture. The majority of people seem to ignore the depiction of character entirely. If it were suggested to them that they were not men of experience they would resent it bitterly; yet how is it that the lines and markings experience has produced, are to be obliterated in their portraits? It would do many of them good

to read, with this point in their minds, Mr. Jerome K. Jerome's remark in his "Diary of a Pilgrimage." Speaking of Daisenberger, the priest who shaped the rude burlesque into the impressive, reverential drama now performed at Ober-Ammergau, he says:

"That is a portrait of him over the bed. What a plain, homely, good face it is! How pleasant, how helpful it is to come across a good face now and then. I do not mean a sainted face, suggestive of stained glass and marble tombs, but a rugged human face that has had the grit and rain and sunshine of life rubbed into it, and that has gained its expression, not by looking up with longing at the stars, but by looking down with eyes full of laughter and love at the human beings around it."

The photographic portraits of this generation will not call forth such observations, nor, we think, would they have inspired that remark of the Chelsea sage, that good portraits are the best pictures to have on one's walls.

Mr. W. Crooke holds the opinion that the standard of photography is very rapidly rising, and that in a few years only the first-class man will be able to stand. This will mean, we think, the man who is not only a good photographer, but who is thoroughly well educated all round and possessed of good taste or sound art training. When the better-class work is in the hands of such men they will, if their businesses are small, do all their own retouching, and if the establishment be large, they will find no great difficulty in engaging, or training to their own requirements, a retoucher who will have no stereotyped, preconceived ideas of the amount and quality of work to be put on each and every portrait negative. We believe Mr. H. P. Robinson mentions in one of his books the fact that he managed for years to conduct a large portrait business without the assistance of a professional retoucher.

Considering the salaries that are offered to retouchers in the advertisement columns of the photographic weeklies, the wonder is that the work on negatives is as satisfactorily performed as it is. What can photographers expect when they are prepared to pay so little? We have before us a negative on which an applicant for a retoucher's position gave an exhibition of her skill, and, judging by the attempt, we think we are justified in saying that she can hardly have been acquainted with retouching pencils and medium for more than perhaps a week. In a moderate-sized business we happen to know something of, the retouching was recently carried on, and is still for aught we know to the contrary, by a boy of about fifteen. His sole idea, as he expressed himself to us, was to make the face as smooth and white and free from wrinkles as possible.

When such are the workpeople employed, is it to be wondered at that the finished results are not notable for originality? Nature has given to us an infinite variety. The professional retoucher seems intent on destroying all the points of difference he can and on making all portraits as much alike as possible.

Is it usual to assume that photographers are helpless—that they must pander to the public taste or go under. To some extent this may be so, but we are inclined to think that there is a good deal of "the blind leading the blind." To many, superficially trained in third-rate businesses and in photographic processes alone, or perhaps without training at all, having come into professional photography from the amateur ranks, the over-retouched, smoothly finished portrait is the acme of perfection. When the day comes which Mr. Crooke forecasts, these men will presumably still continue to supply the man with the short clay pipe at seven-and-six a dozen. In the mean time, the ambitious worker cannot do better than strive by every means available to raise himself to the position of "the first-class man," so that some day he may step into one of the ever-vacant positions "at the top."



Mr. D. L. ELMENDORF, whose work has frequently been mentioned in the BULLETIN, has produced a very successful series of lantern slides from his negatives taken during the Cuban war, which are meeting with universal praise wherever they are shown.

TO PRINT OR ENGRAVE ON COPPER.

By P. C. DUCHOCHOIS.

THE process described in the following line is simple and requires no special apparatus to obtain, from a photo-silver print, either a picture in metallic silver or an engraving on a copper plate. It is based on the reduction of the silver salts by copper and the dissolving action of this metal by ammoniacal salts or diluted hydrochloroazotic acid (*aqua regia*), which, in the cold, does not attack metallic silver.

The copper plate should, of course, be plane, well polished and free from oxidation and greasy matters, which latter condition may be obtained by immersing it in a solution of sal ammonia for a certain period, then rinsing and drying.

The silver proof should be strongly printed, not toned, but fixed in the usual way, and afterwards thoroughly washed and dried. It may be employed at once or at some future time.

The manner of operating is as follows :

Upon the copper plate, wetted with a solution of

Common salt	5 drams.
Nitric acid.....	45 minims.
Water	3 ounces.

the silver proof is placed, avoiding air bubbles and insuring contact, and, on the verso, flowed with the same solution. This done, the whole, covered with a sheet of blotting paper imbued with the salt solution, and over this a sheet of ordinary paper, is put under pressure in a warm place for a period of about four hours, taking care to keep the blotting paper wet.

On the removal of the proof a brilliant image, consisting of metallic silver, will be found adhering on the copper plate. It may happen, however, that this image be faintly visible, but it will appear with all its details, and, perhaps, with some defects if the operation has not been well made, by placing the plate into aqua ammonia until the liquid turns blue, which indicates that the copper has been acted on with formation of the ammoniacal nitrate of this metal. This done, the plate is immersed in a solution of acetate of ammonia prepared by neutralizing acetic acid, or strong vinegar, with carbonate of ammonia. In a certain period, when the solution is colored deep blue, the plate is rinsed by immersion, then allowed to dry spontaneously. The image then appears perfect, standing out on the copper, which is blackened.

In conducting these operations certain care must be exercised, for the image, being formed by a very thin layer of silver, might be impaired by any friction, however slight.

As it is, the plate can now be preserved and employed for many purposes, which suggest themselves, by varnishing it with a hard varnish, copal or shellac.

To engrave, the copper should, as before, of course, be attacked by a solvent without action on metallic silver, either acetate of ammonia or, better, aqua regia diluted with its volume of water for, say, an hour, then adding half a volume of water, then, after the same period, adding again half a volume of water, and allowing the operation to go on for about an hour.

This process is not as perfect and certain as the ordinary photo-engraving methods, but, as it is, it will find its application for ornaments, tracing, etc. No doubt, it can be improved in the hands of experienced engravers.



ABOUT SENSITIZING WITH CYANIN.

BY A. VON HÜBL.

THE frequent failures in the application of cyanin as sensitizer may to a great extent be ascribed to the circumstance, that the peculiarities of this color matter have not yet been sufficiently investigated. The following lines are intended to impart some knowledge upon the subject, and will show how differently this color matter may act under apparently equal conditions.

A peculiarity of the cyanin, hardly observed, but of greatest importance for its application as sensitizer, is its insolubility in water and diluted alcohol. If an alcoholic cyanin solution is diluted with much water, a clear liquid of violet blue color will result, which, by superficial observation, will be taken for a solution of the color matter. But the fact is, that this liquid does not contain the cyanin in a dissolved state, or at least in such a condition, but that its secretion in solid form takes place very easily. If such a solution passes several times through a paper filter, it will become colorless, because the whole color matter remains on the filtering paper.

It is sufficiently intelligible, that this liquid can hardly impart to the photographic plate the desired red sensitiveness, because the cyanin remains on the surface of the gelatine film and only a colorless liquid penetrates to the inside. The flakey cyanin, secreted on the surface of the plate, causes also a tendency to fog and to the formation of spots. The sensitizing bath should, therefore, contain sufficient alcohol, if the bromide of silver grain is to be colored evenly in the inner part of the film, and for this reason the application of an alcoholic cyanin solution is far superior to the general water-bath sensitizer.

The colorless acid compounds of the cyanin are, on the contrary, easily soluble in water, and this circumstance explains the high efficiency of the acetic acid sensitizing method. According to this method, the aqueous cyanin solution is discolored by a few drops of acetic acid, whereby the acid compound, soluble in water, will form. If the plates are bathed in this colorless solution, it will penetrate into the inner part of the film, and during drying blue cyanin will secrete in the same. The connection of the acetic acid with the color matter

exists only in the solution and separates again when dry. A second peculiarity of the cyanin, to which no attention has been paid, is the changeable condition of its alcoholic solution. The cyanin, as procured in market, can be essentially improved in its properties as a sensitizer, if dissolved in concentrated muriatic acid and evaporated to a dry state. It furnishes a color matter, with which clear, strong and pure plates can be obtained. But the alcoholic solution of the color matter so obtained will again suffer a change in course of time, and after a week a reduction of its sensitizing capacity may be observed, and with increasing age of the solution the plates will become less sensitive. The following general rules will be derived from the explanations for the sensitizing of gelatine plates with cyanin.

1. The liquid should contain sufficient alcohol, about 30 per cent.
2. The color matter should be moderate ; 2 cubic centimeters cyanin solution, 1:500, are sufficient for 200 to 400 cubic centimeters bathing liquid.
3. The color solution must be freshly prepared and is to be protected from light.

As the cyanin is already discolored by weak acids, and will then be ineffective as sensitizer, an alkalic body is then added to the bath. Ordinarily a few drops of ammonia are applied ; but the addition of a borax solution is to be preferred, because this will effect a resting alkalic condition of the plates and avoid a discoloration of the same, even in a dry state. If proper regard is had to these conditions, plates will be obtained, which, even when exposed wet, will possess a high sensitiveness and furnish clear and brilliant negatives. If the plate is dried before exposure, its sensitiveness will be reduced somewhat. Dry plates of faultless quality can also be obtained, if dextrine is added to the color bath.

The following formula for the production of cyanin bath plates, based upon numerous experiments, can be recommended.

SOLUTION A.

Ten per cent. aqueous dextrine solution.....	400 cubic centimeters.
Alcohol.	150 “
Borax solution, saturated cold.....	20 “

For orange-sensitive plates, as required for the blue part of the picture, mix

Solution A.....	300 cubic centimeters.
Cyanin (1:500).....	2 “

If the plates are also to be sensitive to the green rays, add to this cyanin bath 2 cubic centimeters chinolin red 1:500 or an eosine silver solution containing ammonia. The gelatine plate is left in the color bath from five to ten minutes, and is dried without washing, in an absolutely dark room.

Translated by

HENRY DIETRICH.

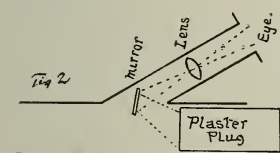
A NEW OPACITY BALANCE.

BY REV. F. C. LAMBERT.

MR. CHAPMAN JONES some three years ago introduced to the photographic world a very valuable form of opacity measuring instrument, which he then named an opacity meter. He has now introduced an opacity balance. The two instruments differ in construction and intention. The meter is an instrument for comparing and measuring the relation between different degrees of density or opacity, the zero of this instrument being the blackness of absolute opacity, absence of light. In the balance we have an instrument designed for measuring an opacity by matching it against an already known opacity, just as one weighs a body in a balance by counterpoising with already ascertained weights. In this case the zero is perfect transparency. The instrument has many points of novelty, and is calculated

to be of very great service. In Fig. 1 we see the general arrangement of parts in ground plan. Thus EFG is a somewhat triangular box (blackened inside to reduce reflections). At m and n are two vertical slits, with adjustable openings. Over these openings the two density patches which are to be compared or matched are placed. At A we have a source of light, such, for instance, as an incandescent gas-mantle. Light from A falling upon two mirrors B and C (adjustable in position), is reflected through the two openings m and n in the triangular box. The pencils of light Bm , Cn fall upon the sides of a narrow angle prism H . The angle of this prism is so adjusted that the two pencils after reflection from it are parallel. They are now received by the object-glass K of a small observing

telescope KP which fits into a hole at the apex of the triangular box. The eye-piece of the telescope is removed and its place taken by P , a cylindrical plug of plaster of Paris. One end of this is made very smooth by being cast upon a sheet of polished glass. P is placed at a



distance from K equal to the focal length of K ; thus parallel rays entering K are brought to a focus upon the surface of P . That is on the surface of P , we have side by side the images of the two slits m and n , or any opacity patches covering them. At D is an opaque screen so placed that no direct light from A , but only reflected light from B and C can enter the slits m , n . In Fig. 2 we show a vertical section (side view) of the eye-piece end of the telescope. From this it is seen that the normal position of the eye piece is occupied by the plaster plug. An opening in the upper part of the tube is made. Into this is adjusted a small observing eye piece with a mirror suitably placed so that the face of the plug is seen. This small tube contains a lens of

suitable focus. The relative positions of the eye, lens, mirror and plug are sufficiently indicated in the sketch. The instrument is used by placing before, say, m , a small portion of the negative to be examined. Then in front of n is placed other strips of known value until their images are seen to be of equal value upon the face of the plug. Warnerke's graduated circular screen was referred to as being of great use in this connection. One great point about this instrument is that a very small patch $\frac{1}{100}$ of inch can quite easily be measured. A strip $\frac{1}{25}$ inch wide is ample. One very important point about this instrument is that the plate to be measured is at a constant distance and well away from the observing screen. The quantity of light scattered by the negative is, therefore, constant and may be neglected. Captain Abney in the discussion pointed out that when the plate is midway between the light source and observing screen, the scattering was at its maximum, *i. e.*, the light reaching the screen was then at its minimum. But if the plate approach either the screen or the light, the light on the screen is sensibly increased. Thus was explained the generally known experience that a negative when used for enlarging gave greater contrast than when used for contact printing. Mr. Chapman Jones in a subsequent communication to the Society explained how intensification by the mercury ammonia method altered the opacities of a plate, and also how bleaching only made a marked difference. Captain Abney explained the apparatus used by him for measuring the scattered light. Upon this matter, one of considerable importance to the enlarger and process man, we shall perhaps have something further to say, very shortly.



WINTER PHOTOGRAPHY.

IN a recent editorial in *Photography*, Captain Abney, speaking of the scarcity of occasions on which it is possible for the English photographer to indulge in snow photography, says in part:

"As a rule, the photographer is shy of showing the photographs he takes of English snowscapes, as they are usually failures, and very different from those which can be taken in sunny Switzerland at the same time of year, more particularly in high altitudes. Here we are generally met with grey, cold skies, and, more often than not, with total absence of sunshine. There matters are usually reversed, except in the low parts, and we have clear, blue skies and brilliant sunshine, better even than in summer at medium altitudes. The difficulty of obtaining pictures in the bright, clear atmosphere is at a minimum, whilst in England it is, perhaps, at its maximum. The rules which govern photography in one case do not apply at all in the other. In the one snapshots may be made successfully. In the other they can rarely be made with any certainty that anything like a properly exposed picture will be obtained. Let us consider the conditions which obtain in the snowclad landscape in England. The whitest part of the picture is the snow. There is not much fear that any part will be brighter, and then

we have tree trunks almost a coal black compared with it. The dark shadows of a shepherd's hut, or, say, a cottage, are intense, whilst a distant osier bed, that has thin streaks of gray thread, representing the snowflake tipped osiers, will be half tones. There are extremes of contrast, but, in reality, they are not so wide as those between the lights and shadows of a sun-lighted landscape. But it is possible in the latter to correlate the lights and shades, whilst in the former it may appear impossible. Probably few have the least notion of the enormous difference there is in the general lighting of a landscape on a cloudy day in winter from that of a bright day in summer. The highest light of a winter landscape may not reflect more light to the eye than some of the deep shadows of a summer's view. The highest light and the deepest shadow in summer may have a difference of one to two hundred or more, and the half shadows to somewhat less. We may take it that the photographic light in winter on a day such as we have described is, at all events, one hundred times less than on a summer's day. If we are using a hand camera at both times we at once see how the winter scene is handicapped by the light alone, and that if an exposure of one-thirtieth of a second is required in summer we must give over three seconds in winter. But it may be at once said that such an exposure to a snow scene will obliterate all the subtle gradations to be found in it, and it will be admitted that for the shadows such as tree trunks the exposure would be none too long. But what is true in summer, say in the Alps, is equally true in winter. In the Alps a perfect rendering of ice and snow and of shaded black rocks can be given on the same negative, and if it can be given there it can be given here, for the principal difference in the two scapes is difference in light, and if this be the only difference, exposure should break down any difficulties. As a matter of fact it does, but the photographer at home is so accustomed to the ordinary summer views that he treats the winter scene as he does the summer, both as regards exposure and development. It is not intended to intimate that no increase of exposure is not given, but only that it is insufficient, and the development of a plate is often carried out on the ordinary "summer" lines. This is a mistake. The negatives require as distinct a treatment as do those obtained in the Alps. It does not do to trust to a stock strength of developer. The main point to attend to is to get a feeble, but fully exposed negative, and then to turn the negative into one which will give full printing density. The development of the old collodion dry plates may be well followed as far as possible. With some kinds it was necessary to bring out at first a merely phantom image full of detail in all parts, but absolutely lacking in density. This phantom image was then intensified, and gradually worked up till the necessary density was obtained. At any instant the process of intensification could be stopped, and the artist in development could obtain a fine rendering of almost any kind of landscape. With gelatine plates of the present day we should endeavor to proceed on the same lines. A very small quantity of the reducing agent should be used, and a large proportion of alkali. The image will appear fairly rapidly, but it will

be very feeble. By degrees a little more of the reducing agent should be added, and the density increased till all detail appears by reflected light, and when looked at through the film should still be very faint. It must be perceived that this kind of development requires an apprenticeship. It cannot be learned except by experience, or unless a master of the method is at hand to give directions. The great point is to know when to stop the increase in density, and to leave it for after treatment. When the development is considered to be sufficient, the negative is fixed and washed and dried, and then studied. In a properly exposed and developed negative there should be every detail in the high lights well defined and marked, and almost all necessary detail in the darkest parts should be visible faintly. There is some detail which may not be seen, but which exists in the fixed negative in an embryonic state. The image must then be intensified, and it is this intensification which allows a good printing negative to be obtained that will have a range of gradation representing by its most opaque part the whitest part of the snow, and in its most transparent part those parts of the shadows which are not required to show detail. Those embryonic details will put in an appearance, and some of them will become sufficiently strong to show themselves in the print. But nothing can be done without sufficient exposure. The writer remembers on one occasion exposing a fairly rapid plate for seven minutes, with a diaphragm of $f/20$, for it was judged that the light was so photographically feeble that this was required. On an occasion such as this a Watkins meter would be of great use when properly used. Exposure is the principal part of the battle, reinforced by a plate that allows what is called great latitude, which means a properly coated plate. A thinly coated plate starved of silver salts will be worse than useless, for it will discourage any tyro from attempting such a subject again. A plate which contains a large proportion of iodine is perhaps the best, but there is the disadvantage in this recommendation that it is only obtainable if the photographer makes his own plates. A plate containing only a moderate proportion is not so useful, as it is apt to give too great a density to the images, but when a certain limit is passed, the image begins to get thin.

"The new lenses which are at present extant, owing to the admirable researches of opticians on the subject of Jena glass, should be a distinct encouragement for winter photography. Formerly a lens which worked with $f/16$ was a satisfactory lens, but when one can work with equal definition with a lens that works with an aperture of $f/6.4$, or greater, we can at once diminish our exposures by $\frac{1}{16}$ ths, and the 3.3 seconds alluded to above becomes only about one-fifth of a second, a time for which it is feasible to use a hand camera, though it must be confessed it is not to be recommended for the purpose. The writer would prefer to double or treble that exposure, knowing that the judicious treatment of the negative in the developer will allow it, and probably give a more satisfactory picture, though to the eye it may appear somewhat veiled from the prolongation. It may here be said that some of the most

successful winter photographs which the writer has taken were distinctly of this character. The printing took longer, but the results were soft, full of gradation, and the points which in the print should have been the deepest black of which the papers would allow, were so. The advice to be given, then, is, to use a lens capable of being used with a large aperture, to expose very fully, to develop a feeble image, and then to get the necessary density by means of intensification. Intensification alters the gradation in such a manner that the scale becomes better suited to such a subject as that we have supposed to be under consideration."



SOME NEW METHODS OF DEVELOPING DAGUERREOTYPE PLATES AND OF PHOTOGRAPHING ON COPPER.

BY COLONEL J. WATERHOUSE, I. S. C.

(Continued from January number.)

IN carrying out these experiments with Daguerreotype I have really had two objects in view. The first was to ascertain if color effects could be obtained on Lippmann's principle of a reflecting surface at the back of a grainless sensitive film, and secondly, the applicability of the process to photo-mechanical requirements. As regards the first I may at once say that I have had very few traces of color in any of my plates. In one, however, of the plates exposed under the color scale and developed with acid pyro, it was noticeable that under the pure green the plate had a distinct pinkish tint, while under the bluish glasses it had a yellowish tint. A somewhat similar effect was noticed under the blue glasses on another plate. It is possible that by varying the conditions of exposure and development, and the use of suitable dyes, other colors could be produced.

The first thing was to ascertain if the plates could be orthochromatized and made sensitive to the yellow rays of the spectrum. For this purpose a plate was sensitized in the usual way—thirty seconds over iodine, twenty seconds over bromine, and again five seconds over iodine—one-half of the plate was washed with an orthochromatic tincture containing erythrosin silver, ammonia and picric acid at 1:5,000, and dried. The other half was left plain. Both halves were then exposed to the sun spectrum in Vogel's small spectrograph for ten minutes each. The plain half showed only action in the blue, but, on full development with mercury, the orthochromatic half showed a distinct prolongation of the spectrum towards the yellow about D, with a minimum in the green, as usual with erythrosin silver.

Plates were then exposed by contact in a printing-frame under a color scale or artificial spectrum made of fifteen colored glasses, and were developed with mercury. In this case, also, there was a distinct increase of action under the yellow and yellow-green glasses, Nos. 5, 6, 7, 8, the latter being a most refractory color (yellowish-green), seldom giving an image on a sensitive plate. It may be noted that this erythrosin silver tincture does not impart much additional general sensitive-

ness to the plate—nothing like so much as when it is used in combination with the organic sensitizers mentioned further on.

I have not worked this out further, but the experiments show clearly that Daguerreotype plates can be rendered sensitive to the less refrangible rays in the same way as other photographic plates sensitized with iodide and bromide of silver, and treated with suitable dyes.

The next step was to try if the latent image on the plates prepared in the ordinary way could be developed with an organic developer. I first of all used pyrogallic acid with acetic acid, the old wet collodion developer. This by itself did not bring out the image, but when a few drops of silver nitrate were added, I obtained a fairly detailed image, much resembling an over-exposed ordinary daguerreotype, and showing a positive picture. This plate had ten minutes' exposure, and is not very perfect.

One of the reproductions of the color scale printed by contact, now in the Exhibition, was developed in the same way, and in this it may be noticed that the less exposed images appear positive with a white deposit, while those upon which the light has acted more strongly appear darker. There is, however, no trace of solarization or actual reversal.

I then tried the color scale again, but developing with pyrogallic acid and acetone, and obtained, good images, but very thin, and all appearing negative, *i. e.*, dark on a light ground.

A landscape exposed ten minutes, and developed with the same developer, gave only a very faint image, just round the sky line. It also appeared negative.

The next trials were with an alkaline developer, using pyrocatechin and soda. This also gave me only a very faint negative image with five minutes' exposure on a fine bright day, though it worked exceedingly well for dry plates and paper.

When working in Calcutta with an orthochromatic collodion emulsion similar to Dr. Albert's, I was greatly struck with the enormous increase of sensitiveness conferred on the plates by treatment with an erythrosin-silver solution, especially if exposed moist. I also got very good results with quercitrin alone or with gum, the latter combination proving useful if the plates were used dry. Bearing this in mind, I tried the effect of an organic sensitizer, using a mixture of quercitrin, gum, glycerine and sugar diluted with water, which was poured over the plate after sensitizing. It was then exposed, while still moist, for the same time as the last plate, and developed with the same developer, the sensitizer being washed off before development. The effect was evident at once. The plate showed good detail, and if anything, seemed rather over-exposed. The image was again negative, with a very fine and delicate deposit. The sensitizing action of the quercitrin and gum was very marked.

The same experiment was repeated with an acid iron developer containing ferrous sulphate, acetic acid and sugar, and suitable for the development of wet collodion negatives. As before, the plate exposed for three minutes and developed with the iron developer, with a little

silver added, was very much under-exposed, while the plate treated with the quercitrin and gum solution, which was washed off before development, though not very perfect, showed good detail, and was rather over-exposed with the same exposure as the first plate exposed plain.

A third plate was sensitized in the same way, but before exposure was washed with some of the quercitrin and gum solution to which a little of the orthochromatic tincture of erythrosin-silver and ammonium picrate had been added. The solution was drained off and the plate was exposed while moist for only two minutes, and then developed with the same acid iron and silver solution. The result though not perfect, shows that, with care, practical results could be obtained in this way. The plate is a little over-exposed, but it is clear, and there is an absence of the disagreeable glitter of the ordinary daguerreotype plate, so that the picture is far more easily seen. It would be easy to prepare a suitable iron developer and adjust the exposure so as to obtain a perfectly clear image when viewed as a positive.

I have also found tannin useful as a sensitizer, and no doubt gallic acid and other organic sensitizers, or so-called preservatives, formerly in use for dry collodion plates, would also prove useful. In Calcutta I found that a sensitizer containing gum and tincture of jaborandi gave me very satisfactory results with the collodio-bromide emulsions, but it has not answered well with the daguerreotype plates.

(To be continued.)



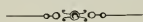
AN era in the history of the Providence Camera Club was reached in early December, when the Club moved into its new quarters in the Hodges Building on Weybosset street. The unusual success that has attended the efforts of the Club during the past year has made this step possible, and the Executive Committee are to be congratulated upon the very successful solution of the problem which confronted them when a move was determined upon.

The Club has grown since 1883 from a membership of less than a dozen, who met in hired rooms—not at all commodious—to its present large number, and the very commodious quarters which are now at its disposal. The new year begins for the Club with exceptionally flattering prospects, and a most successful future is looked forward to.

A NEW camera club was organized in Chattanooga, Tenn., on December 12th, with the following officers for 1899: President, M. L. Mudge; Secretary and Treasurer, Emil B. Igou. The Club starts out under very promising auspices.



THE officers for the ensuing year elected at the Alameda Camera Club of California are: President, E. L. Gifford; Vice-President, W. J. Robinson; Secretary and Treasurer, Miss Mary Morss.

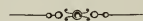


THE third annual exhibition of Amateur Photographers belonging to the Central Branch of the Philadelphia Association Camera Club has just been held in that city, the exhibit being very tastefully arranged and attracting a large amount of interest. The prints (while not as numerous as in former years) were much in advance of previous exhibits from a standpoint of quality. The exhibition, as a whole, was most interesting and valuable.



THE Columbia Photographic Society of Philadelphia is making strenuous efforts to increase its membership and keep up the interest of the society in photographic work. A very large and attractive list of meetings and entertainments is planned for the remainder of the winter, and every inducement offered to make membership attractive and of value.

This Club is one of the few in the country which occupies an entire four-story building, fitted up with first-class facilities for photographic work of all kinds, and containing, as well, a library, billiard-room, parlor, etc.



THE Richmond Camera Club of Richmond, Ind., issue a very attractive circular programme for 1899, containing a list of its officers: President, John C. Connely; Vice-President, Charles L. Green; Secretary and Treasurer, Walter Henderson, together with executive and criticism committee, list of prizes awarded at recent exhibitions, and a full plan of meetings, lectures, etc., for the remainder of the year. The programme is very attractive and cannot but be of interest to the members of the Club.



THE BULLETIN is in receipt of an invitation from the Chicago Society of Amateur Photographers to attend an illustrated lecture before the society by Mr. Charles D. Erwin, whose subject is "India." We regret that distance makes it impossible for us to accept this invitation, and, in passing, would comment upon the very attractive manner in which the Society keeps itself before the public. Their circulars and pamphlets containing by-laws and rules are gotten up with extreme good taste and attractiveness, and go far to make one wish it were possible to be identified with a club which devotes so much attention to its printed matter. We believe it to be a sure sign of success.

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PORTRAIT STUDY.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

MARCH, 1899.

No. 3.

THE UPWARD TENDENCY IN PHOTOGRAPHY.

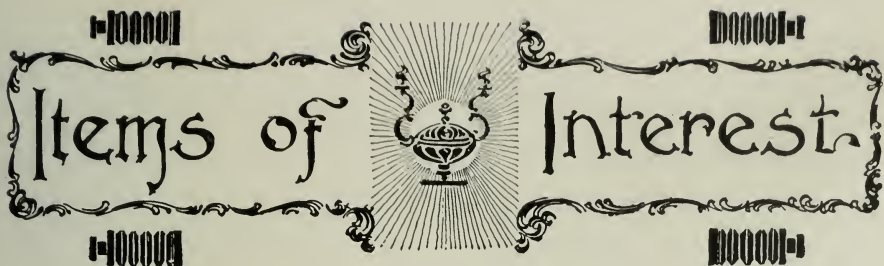
THE spirit of unrest which has, of late years, entered so largely into the business life of this country, with its tendency to provoke investigation and improvement of affairs in such a vast number of directions, is coming to be felt as a strong factor for advancement in photography.

The closing years of this century are destined to stand out in bold relief as a period of enlargement and expansion in all directions, when, in the future, its history is traced by coming generations.

By the spirit of unrest is not meant that nomadic instinct which prompts the savage to rove from spot to spot in search of mere change of environment, but the unrest born of a desire to increase one's power and knowledge. To expand and to grow in wisdom, is the natural tendency of mankind, and the world continually improves with the accumulation of knowledge acquired and disseminated year by year; but this element of push, of research and investigation has lately come into the foreground of affairs, with a vigor never before seen in the history of the world, and its effect is stimulating every branch of business, trade and commerce, and every department of art and science, to increasing efforts toward improvement in methods and materials, as well as in their application to new conditions.

In no field of applied science may this tendency be more noticeably seen than in photography. But a short time since, he who would start a photograph gallery might purchase all the tools and requirements then considered necessary, ready made for him at any dealer's establishment; and if his gallery was supplied with a good battery of lenses, backed up by the requisite number of imposing boxes and flanked by grounds and accessories, it was considered all sufficient,

Items of Interest



THE advantages and disadvantages of the metric system are again the cause of discussion in the photographic press on the other side, and advocates for its universal introduction are quoting the existence, in the United States, of a society which advocates its adoption, and whose President is Professor Mendenhall, of Worcester, Mass. In furtherance of their claims, they also mention the bill which is before the present Congress, and which, it is claimed, is quite likely to pass. By this bill, its introduction will be made compulsory in the United States after the 1st of January, 1901.

This is a question which has, for a good many years, occupied more or less attention, particularly in the photographic and kindred trades, and is one which, when definitely settled one way or the other, will do away with a considerable amount of confusion now existing.

There is much to be said on both sides of the question.

THOSE of our readers who are intending to visit Paris during the Exposition of 1900 will doubtless be glad to know that it has been definitely decided by the managers that no monopoly will be granted in the matter of photography, but that photographers of every country taking part in the exhibition will be allowed equal privileges. Just what terms and regulations will be put in force has not yet been definitely decided; but the above decision has been arrived at, and is said to be official.

IT is a delightful thing, and one that seldom occurs in this life, to observe one seeing himself as "ithers see" him, and the following article, published in a recent number of the *London Daily Telegraph*, from the hand of Mr. Hall Caine, seems to fill the above requirements, without leaving any room to rattle around:

"One thing which strikes the most ignorant traveler in America is the intelligent attitude of the American workman towards automatic machinery. So far from being afraid of it, he welcomes it. The English workman, on the other hand, appears to discourage and suppress it. It would seem to me that the American workman is fighting with, while the English workman is fighting against, a very clear law of Nature, and that, sooner or later, the trade of the world will be to him who uses every help that Nature gives him."

A METHOD is published by one of the leading foreign photographic papers which is said to be effective for keeping "unfixed negatives." The negative is bathed, after development, in citric acid, 1 part; chrome alum, 3 parts, and water, 100 parts. The plate is then rinsed with a solution of sugar 1 to 20, and dried. When it is desired to fix the plates, however, they must be well washed to free them from the acid, as otherwise a precipitation of sulphur is likely to result. This method is certainly very instructive, but we fail to see where it has any practical application in photography.

A QUESTION has recently been brought up in the English courts which will prove of interest to photographers on both sides of the water, and the settlement of which will be looked for with more or less anxiety, by our English workers particularly.

It seems that a photographer, in making an exposure on an old village inn, included in the picture a well-known man of the neighborhood, and subsequently showed the view in a lantern slide exhibit before one of the English clubs. It happened that the party included in this picture had strong objections to being photographed, and has commenced proceedings against the photographer, claiming damages of £150, and basing his action on the ground that, "while following his usual calling, photographs of him were taken without his knowledge or consent, and afterwards publicly exhibited."

If by chance his view of the matter should be held by the justice trying the case, it will have a tendency to open up innumerable suits of a similar nature, and may result in a question of greater import than at present is even dreamed of.

IN the recent action of the National Board of Fire Underwriters, restricting the handling and selling of calcium carbide, a most important step has been taken, and one which, it seems to us, is quite unusual in this country.

Under the new rule, all calcium carbide in transit through the city and in storage therein, must be in hermetically sealed iron receptacles, and plainly marked "calcium carbide, keep dry," and no single package may exceed in weight 125 pounds.

Regarding its sale, not more than 20 pounds, either in bulk or in cartridges, can be sold or kept in any building used for a dwelling or mercantile purposes, and this amount can only be kept on a permit obtained from the Fire Department. Under this permit, it is only allowable that it shall be kept in cases of 2 pounds; that they shall be in tight metal packages and elevated at least 6 inches from the floor in a fire-proof safe, above the street grade. The manufacturing, transportation, storage, selling or use of liquefied acetylene is absolutely prohibited within the city limits. A very full and detailed description of the manner in which it may only be used, and a most complete set of rules governing its handling and storage is published, failure to observe any of which will vitiate the insurance carried on buildings and contents.

MR. DWIGHT L. ELMENDORF continues to be in demand in the lecture field, and is making for himself a name ranking easily with the foremost in the land.

A series of four Lenten lectures, illustrating the "Santiago Campaign and Destruction of Cervera's Fleet," "The Leeward Islands, or The Lesser Antilles," "The Grand Cañon of the Colorado," and "Old Mexico and the Bull Fight," are announced to take place at Sherry's during February and March, under the patronage of a very large and distinguished list of leaders in New York society.

We understand, also, that Mr. Elmendorf is under contract not to lecture in the City of Brooklyn, excepting for the Brooklyn Institute, during, practically, the remainder of the winter.



THE old saying, "It is pleasant to be missed," comes forcibly to our mind when it is announced by our publishers that the International Annual, Volume XI, "is out of stock," notwithstanding the fact that the edition was the same as in several years past. The sales of the "Annual," this year, have been exceptionally large, and much earlier than usual our publishers announce that the stock is entirely exhausted, with the exception of a very few copies in cloth—less than fifty—which will doubtless be gone before this item reaches the eye of its readers. A record of this kind constitutes the most tangible evidence of appreciation that can be offered.



SEVERAL of the Western States are agitating the matter of enacting license laws for photographers, by which it will be necessary for each regular photographer, desiring to practice his profession in the State in question, to register himself and pay a tax for the privilege of doing business within its borders.

The great advantage of this proposition, if it is carried out, is claimed to be that it will, in a large measure, tend to cut out the fraudulent operators and canvassers who have, in the last few years, monopolized so large a field to the detriment of the regular practicing photographer.

Action in this connection will be awaited with a good deal of interest by the fraternity.



THE photographers of Springfield, Ill., have organized an association to be known as "The Photographers' Association of Central Illinois," its purpose being "advancement of the art and science of photography and mutual benefit of its members." It is proposed to hold a convention once each year for the purpose of exhibiting and competing for prizes, and it is suggested that Springfield, being centrally located in the State, may not unnaturally be looked upon as the permanent home of the convention. The officers for the present year are: President, G. M. Burleigh; Vice-President, V. E. George; Recording Secretary, L. S. Anderson; Corresponding Secretary, R. A. Lapham; Treasurer, A. W. Keesberger.

THE Fourth Annual Convention of the Michigan Photographers Association was held at Grand Rapids, Mich., on the first of February, and was a very interesting and instructive occasion. Practical talks by practical men were given before the association on a number of live questions, and were each enjoyed by the members. Professor A. H. Griffith, of the Detroit Museum of Art, delivered an address which was also much appreciated. The exhibits were of excellent quality. The next annual meeting of the association will be held at Detroit. C. M. Hayes, of Detroit, was elected President for 1899.

Prizes were awarded as follows: Silver trophy for professionals, to F. C. Fryett, of Grand Rapids. For the best portrait from out of State, to W. F. Schreiber, of West Bend, Wis.; while the first prizes for Michigan exhibits were awarded in Class "A," to A. G. MacMichael, of Detroit; Class "B," to J. M. Reidsma, of Kalamazoo; Class "C," to D. J. Cook, of Mason; Class "D," to A. V. Roehlheim, of Eaton Rapids; Class "E," landscapes, to Beckman Bros., of Saginaw, and Class "F," retouching, to Miss Genevieve Brooks, of Grand Rapids.



TO THE PHOTOGRAPHERS OF AMERICA.

I WOULD respectfully call attention to our next Annual Convention, to be held at Celeron, from July 17th to 22d inclusive. The Executive Board having held session and passed upon the many difficult problems arising, to the best of their judgment, with equal fairness to all, call upon you for your indorsement, your exhibits, and, above all, your attendance, to assist in making this, our Nineteenth Annual Convention, a grand one.

Don't sit in your studio, feeling satisfied with your efforts, but come out and join us and spend a week at one of the most beautiful spots in America, studying the exhibits gathered from all sections of the country and exchanging ideas with the many new acquaintances you will make. You will find them the most progressive, energetic and most social set of gentlemen you have ever met. Let your appointments await your return, and when with us, lend us your aid in preparing for an ideal Convention for 1900.

Our Association should be the pride and have the support of every photographer in the land. Let's stir ourselves, take more interest in our Association, and contribute our mite to its sustenance. Attend our meetings occasionally, and not depend wholly on our journals to place before us the benefits and advancements our Convention alone make possible. Join with us this year in the hustle for artistic progress, and you will return home enthused, feeling that you have enjoyed a week of profit and pleasure that you could ill afford to have missed.

Our membership fees are only \$3, annual dues \$2, and the Treasurer is now ready to receive same.

Yours respectfully, GEO. W. VARNEY, *Treasurer*,

Photographers' Association of America.

3937 DREXEL BOULEVARD, CHICAGO.

PHOTOGRAPHERS' ASSOCIATION OF OHIO.—REPORT OF THE EXECUTIVE COMMITTEE.

MEETING was called at Toledo, January 9, 1899. All the members being present, the Secretary and Treasurer's report for 1898 was read, which showed that the Convention last year was a financial success, leaving a very fair balance in the treasury. The books were audited and found correct. The bond of the Treasurer was presented and approved.

August 30th, 31st and September 1st were decided on as the dates for the Ninth Annual Convention, to be held at Hotel Victory, Put-in-Bay Island, Lake Erie, O. The following Committees were appointed:

Prizes, Buttons, Souvenir Book and Printing.—G. M. EDMONDSON,
C. S. BATEHAM.

Entertainment.—R. P. BELL SMITH, GEO. B. SPERRY, I. BENJAMIN.

Exhibits.—L. E. MARTINDALE, R. D. BEEM.

Instruction.—G. M. EDMONDSON.

Salon.—W. K. VAN DE GRIFT.

Mr. Van De Grift made a liberal proposition to frame the salon pictures suitably and inexpensively, and was authorized to do so.

This year the salon will be complete, and better than ever before.

It was the animus of the meeting that this Association should be self-supporting, and a resolution was passed that the officers obligate themselves to meet any deficiency that might arise without calling on the dealers to donate. The list of awards was carefully gone over, and, as finally drawn up, was the result of the most serious consideration as to what would best suit the majority of photographers in the State.

Mr. McCreary, representing the Hotel Victory Company, submitted a contract for the coming Convention, which was accepted, signed and copy of same left with the Secretary. By the terms of this contract the Association is given the free use of all the rooms desired for Convention purposes, room with water connections for demonstrations, ballroom and orchestra.

The members are offered the superb accommodations of this famous hotel for \$2 per day; children under ten, half price.

Here is a splendid place to bring your family and take a vacation on this most beautiful island of the lakes. Everything will be in readiness the first day, so that the full three days can be spent with pleasure and profit.

C. S. BATEHAM,
Secretary.

The following classes are open only to the competition of active members of the Photographers' Association of Ohio in good standing:

Certificate of Honor.—Signed by art judges, testifying to artistic excellence, will be given to each member having one or more pictures selected for the salon.

Grand Prize.—A silver loving cup. Twelve portraits, no restriction as to size.

Genre Class.—One picture, not less than 10 inches one way. First, gold medal; second, silver medal.

Class A.—Six portraits, no restriction as to size. First, gold medal; second, silver medal; third, bronze medal.

Class B.—Six portraits, no restriction as to size. First, gold medal; second, silver medal; third, bronze medal.

(Competitors in Class B must be from towns of fifteen thousand or less.)

Class C.—Six portraits, no restriction as to size. First, gold medal; second, silver medal; third, bronze medal.

(Competitors in Class C must be from towns of five thousand or less.)

Class D.—A rating contest. Six portraits, no restriction as to size. Prizes to be a diploma to all competitors obtaining a rating of 75 out of a possible 100.

Class E.—Views interior or exterior. Six pictures, no restriction as to size. First, silver medal; second, bronze; third, diploma.

Class F.—Instructive class. Prints made from negatives before and after working with pencil, crayon, knife, stump or any other device showing skill of workman. No restriction as to size or number. Open to employers or employees. First, silver medal; second, bronze medal; third, diploma.

SPECIAL CLASSES OPEN TO ASSOCIATE MEMBERS.

Special.—Professional photographers outside of the State of Ohio. One picture, no restriction as to size. First, gold medal; second, silver medal; third, bronze medal.

Special.—Amateur photographers, open to all the world. One picture, no restriction as to size. Best landscape or marine, one diploma. Figure study, one diploma. Instantaneous of objects in motion, one diploma.

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HINTS TO PICTURE-MAKERS.

IN a recent lecture before the Leeds Photographic Society of England, Mr. W. E. Tindall, R. B. A., urged the importance of a thorough understanding of perspective for the portrait photographer; saying, among other things, "that it should be the object to make the spectator feel that the head is completely round, that it has a back as well as a face. You hear some complaining that the portrait is simply a mask, and sticks to the background. The fault is in aerial perspective."

Referring to color, the lecturer said "it was almost as necessary to the black-and-white man as to the painter. There are several kinds of black and several kinds of white. The black you want should be a rich, juicy, succulent black, a black with power in it and yet tenderness, a black that will suggest space and not give you the impression of a gray piece of paper."

"The white you should use is not white at all. Did you ever see white in nature? If the sun is shining, and you stand up so that your back is to the sun, you will see your form outlined on the ground. This is called a shadow, simply because you have shaded or prevented the sun shining on the place. This shadow has not added anything onto the ground. It has taken something off, sunlight, or, in other words, light. Thus, I think you will see, if you wish to represent 'light,' you must have warmth, and white is not warm, it is cold."

PROLONGATION OF LATITUDE IN THE TIME OF EXPOSURE.

BY M. MERCIER.

THERE are substances which, when added to the bromide of silver gelatine before or after exposure, exercise a distinct and very intense influence upon the character of over-exposed negatives. While making experiments in this direction, organic and inorganic substances were tested, among which were, on the one hand, salts of antimony and arsenic; on the other hand, morphine and codeïn. These substances, if added to the sensitive film in suitable and proportionate quantities, generally possess the property of increasing the density of deposit in the high lights at over-exposure. The salts of antimony and arsenic act very slightly upon the half-tones, while morphine and codeïn, on the contrary, accelerate their development. Still other substances, for instance, the eserine, are slow in the development of the half-tones, while the high lights are strengthened by them at the same time.

The salts of antimony and arsenic give excellent results to over-exposures. For this purpose a certain quantity of an organic salt of these two metals is added to the emulsion or to the bath. The arsenic salts being very poisonous, and their action much less than that of the antimony, the latter salts were mostly applied, principally the double salts of tartrate of antimony and tartrate of potassium. This substance accelerates extremely the development of the high lights, and has no influence upon the half-tones. By the use of this medium a much longer exposure can be made, and still negatives with good contrasts be obtained. To make the experiment, an ordinary bromide of silver plate is immersed to one-half of its size from one to two minutes into a 2½ per cent. solution of tartaric acid, is dried in the dark and then exposed sufficiently long, so that the not immersed part of the plate would give a picture totally over-exposed. In the development, the action of the salt will then show most intensely. The one-half of the plate not treated, will give either a very flat or a solarized picture, while the other half furnishes a strong negative. The treatment with tartaric acid may take place before or after exposure. It has no influence upon the result. But the kind of development is most important. To obtain the best result, a hydrokinon developer is to be recommended, of the following composition:

Hydrokinon.....	8 grams.
Sulphite of soda (free from water).....	50 "
Soda.....	100 "
Bromide of potassium.....	2 "
Water.....	1,000 cubic centimeters.

The action of the morphine and codeïn is somewhat different, but the development is essentially accelerated by these two substances, while at the same time the action upon the lights is not so strong as with antimony.

Translated by

HENRY DIETRICH.

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

LIGHT-Sensitive Silk.—Boil 10 grams of Iceland moss with 2 liters of water, decant and filter. Nine hundred cubic centimeters of the solution are mixed with 40 grams of table salt and 10 cubic centimeters of glacial acetic acid. White silk is left floating upon this solution for two minutes, and dried. After that, sensitize in yellow light by floating the prepared side upon a bath of 100 cubic centimeters distilled water, 10 grams nitrate of silver and 1 gram citric acid. Suspend and dry in the dark. Print in a regular printing frame under a negative, as ordinarily, without printing too dark, wash and tone in a toning bath as used for albumen paper. Fix in hypo soda 1 : 10, wash well, dry out fully and iron from the back by pressing, without moving the flatiron.

Restoration of Yellow Albumen and Chloride of Silver Prints.—They are put into the following bath:

Concentrated solution of bichloride of mercury	
in nitric acid.....	8 cubic centimeters.
Water.....	1,000 “

When the picture has changed in this solution to a purple-violet tone, immerse the same in the following solution:

Chloride of gold and potassium.....	1 gram.
Water.....	1,000 grams.

Another method is the following:

The picture is (in the darkroom) completely bleached in the following bath:

Bromide of potassium.....	3 grams.
Sulphate of copper.....	6 “
Water.....	100 “

After this the print is washed, dried and exposed to light for a moment, and then it is developed with oxalate of iron or amidol. The developer may be acidified with tartaric or citric acid. Final fixing and washing is as usually.

An Improvement in Platinum Prints.—By addition of persulphates to developer, the writer succeeded in finding a medium to reduce the the scale of the blackening of the prints uniformly in all parts, so that by its application it is possible to obtain from thin negatives platinum prints rich in contrast and still harmonious. Other means of oxydation, particularly bichromate of potassium, have so far been used for this purpose, but they had the disadvantage of a non-uniform reduction of tone gradation and injury to the middle tones. By application of persulphates (potassium or ammonium persulphate), this is not the case. The writer prefers the ammonium persulphate to the potassium persulphate (anthion), because the former is easily soluble at equal action, and does not require to be kept in stock. If we consider as normal developer for platinum paper the composition (which with most platinum papers gives the same result as saturated oxalate of potassium solution):

Saturated (33 per cent.) oxalate of potassium solution.....	4 parts.
Distilled water.....	8 “

the action of the persulphate will commence to be perceptible, if we take:

5 per cent. potassium or ammonium persulphate solution.....	1 part.
Oxalate solution, 33 per cent.....	4 parts.
Distilled water.....	7 "

To obtain a stronger action, more parts of water may be replaced by a 5 per cent. persulphate solution, as follows:

5 per cent. persulphate solution.....	4 parts.
Oxalate solution, 33 per cent.....	4 "
Distilled water.....	4 "

Thereby the scale of blackening is considerably reduced.—PAUL VON JANKÉ.

Photographs Luminating in the Dark.—To make a photographic portrait or a landscape luminate in the dark, the following simple process may be followed:

Apply to a sheet of cardboard a thin coat of starch paste, and spread over this, while yet in a sticky condition, some powdered sulphate of baryta or sulphite of lime. Brush a little paste over this, before it is dry, to make the powder adhere better. The photographic picture, which must be unmounted, should now be made transparent. This is done by soaking the back with castor oil and wiping off the superfluous oil with a clean rag. The transparent print is then pasted upon the prepared side of the cardboard and dried near a stove. If this picture is exposed to light, the rays will penetrate through the transparent paper to the powder, which absorbs, and later on will emit them again, being a so-called phosphorescent body. In consequence of this treatment the picture luminates in the dark. Its appearance remains generally the same, the lighting of the powder having taken place in proportion to the various intensities and depths of the tones forming the picture. The high lights will luminate very strongly, the shadows very weakly.

Exposure from the Reversed Side.—In all the double-coated bromide of silver gelatine plates the upper film is highly sensitive, the next one has less sensitiveness, and the third one next to the glass is still less sensitive. The picture which forms in the upper film will be pretty flat at a somewhat longer exposure, that of the second film will be harder, the picture of the third film extremely rich in contrast. The same advantages which the before-mentioned plates are said to possess, can also be obtained on ordinary plates, if exposed from the reversed side. The light, falling in on the opaque bromide of silver gelatine film, is considerably reduced by its penetration, and thus the side of the sensitive film furthest from the glass will be considerably less lighted than the other. Such a plate will be just the reverse during development from the plate, exposed from the front. With the plates exposed from the back, the developer acts first upon an under-exposed layer of bromide of silver parts. The further it advances, so much better exposed parts will be met. The development can, of course, be interrupted at once, when the desired strength has been obtained. The extraordinary advantage of an exposure from the back will be comprehensive if the mechanical part of the ordinary process is con-

sidered. Here the developer will come strongest in contact with that film which has received most light. On under-exposed plates this will not do much harm. But when over-exposed, the plates exposed from the back have quite a considerable advantage in comparison to the normal ones. The effect of back exposure will increase in proportion to the film-thickness of the plate. The silver contained in the plate is undoubtedly better used up than in the normal way of exposure, because here the fogging of the plate will make a development of the depths impossible. Compare herewith double-coated plates in which the contents of silver are not entirely used up, because a large part of the bromide of silver is not in the condition of highest light-sensitiveness. With the double-coated plates, an exposure from the back would be to no purpose. Orthochromatic plates will show the above-described effect stronger than the ordinary ones. The optical action of the sensitizers is also increased. The exposure from the back will be of principal consideration for screen views, because here it is of great importance to avoid fog. The bromide of silver gelatine plates intended for this purpose have, therefore, always a thicker film than ordinary dry plates. For ordinary views with the camera, the change from right and left will always be a drawback for back exposure, but with films this is of no consequence, because they admit printing from both sides. But the films have generally a very thin coating, and the effect of a back exposure will, therefore, be not so great.—By R. ED. LIESEGANG.

Sulphite of Soda, Free from Water, and Corroded Sulphite of Soda.—The sulphite of soda used for the preservation of all alkalic developers, is found in market in two different kinds, as crystallized sulphite soda, and as sulphite of soda, “free from water.” The latter forms a fine powder. The crystallized sulphite contains 50 per cent. crystal water, so that of this twice the quantity has to be taken, as would be needed of the kind, which is free of water. The latter has the advantage, in comparison with the crystallized sulphite, that it keeps better in the air; it takes also a smaller volume, and for these reasons it is frequently employed for the production of developers in powder form.

The crystallized sulphite of soda corrodes in the open air, that is, it loses its crystal water and decays to a white powder. This decayed sulphite—as is oftentimes supposed—has by no means the same composition, as the sulphite free from water, which is found in market. It contains considerable quantities of sulphite of soda, which have formed by the combination of the sulphite with the oxygen of the atmosphere. But this sulphite of soda has not the least preserving action upon the developing solutions and has the disadvantage, that in larger quantities it has a slow action upon the developer. For this reason it is necessary to keep the sulphite of soda in well-corked bottles. For above reasons corroded sulphite of soda should never be used for the preparation of developers, but it may be employed in the preparation of a bisulphite of soda solution (for acid fixing baths), by mixing a saturated solution with muriatic or sulphuric acid under stirring, until the solution commences to smell like burning sulphur.

PRINTING ON SILK HANDKERCHIEFS WITH THE MARTIN SOLUTIONS.

THE first requisite in printing on a silk handkerchief is that it be clean. By this I mean that the handkerchief, even if freshly bought and unruffled, must be thoroughly washed in hot soap suds and rinsed free from soap before it can be sensitized, the cleanliness that I refer to consisting in utter freedom from the substance that is almost invariably used by silk manufacturers to impart gloss and stiffness to their products.

Having cleaned and rinsed the silk, you are to lay it over a piece of clean glass of the same size or slightly smaller than the negative from which the print is to be made; smooth it out with your fingers so as to get the threads even, and then set it aside to dry.

When it is quite dry, apply the "A" solution to it with a brush. This solution must be applied evenly and thoroughly so that it will glisten equally all over when it is held so that the light reflects from it at an angle.

You are to allow the "A" solution to dry hard on the handkerchief, which, by the way, is to be left on the piece of clean glass already referred to, during this and all subsequent operations up to the washing that precedes toning, and, when it is quite dry, you will apply the "B" solution with a flat, rubber bound, camel's-hair brush. This brush must be washed in clear water, both before and after use, and should be reserved exclusively for the "B" solution.

The best way to handle the "B" solution is to pour a small quantity of it in a clean cup and wet the brush in that. This helps to keep the balance of the solution clear and free from foreign substances, and what is not used can be filtered back into the bottle.

You will fill the brush as full of the "B" solution as it will hold and then apply it to the handkerchief as rapidly as possible, beginning at the center of the prepared spot and working outward. By this method it is quite easy to avoid streaks.

When you have applied the "B" solution, which you may safely do by any ordinary artificial light, but not by full daylight, you must set the handkerchief aside in the dark and in a dry place to get bone dry.

After this the printing is quite simple. The negative is placed in the printing frame, the handkerchief is laid against it with the clean glass toward you and the back clamped on over it.

Printing must be carried on until the image, as seen at the back through the clean glass, shows considerable darkening in the high lights.

You are to wash the print in several changes of water to remove everything from the fabric but the printed image and some insoluble chloride of silver.

After this preliminary washing you may tone in any manner that you want to, but the toning bath given for the "Aristo Platino" paper is the one that is recommended, with the further suggestion that, in addition to the very thorough washing that precedes the hypo bath,

the silk have a bath in water containing a small quantity of ammonia before it is fixed.

By observing these directions, and by copiously washing your print in cold water after the fixing bath, you will be able to get prints on silk equal to the best that can be made from the negative used.



REDUCTION OF COLLODION EMULSION NEGATIVES WITH AMMONIA PERSULPHATE.

BY DR. E. VOGEL.

COLOR-SENSITIVE collodion emulsion is generally used now by the reproduction establishments for copying colored objects. This process has the great advantage, that plates of any size can be prepared in a few minutes, which, after coating, can be exposed in still moist condition. The price of the collodion emulsion is also comparatively low, so that the working with the same is essentially cheaper, than with dry plates. But a great disadvantage of the collodion emulsion, known to all who have worked it for a long period, is the difficulty of producing harmonic negatives from originals, which are rich in contrast, particularly oil paintings, the high lights of the negative, in spite of all artificial manipulations during development, receiving an excessive covering, if a normally exposed plate is well developed, to get delineation in the deep shadows. By longer exposure the delineation is obtained, but the high lights will oftentimes grow pale, the collodion emulsion plates having a great tendency for solarization, and that to a higher degree than is the case with bromide of silver gelatine plates. Here now the ammonia persulphate, recommended by Lumière Brothers, for the improvement of too hard gelatine negatives, will be found a valuable medium. The collodion emulsion negative is developed without regard to any excessive density of the lights, until the delineation of the shadows has been brought out, and it is then treated, after fixing and thorough washing, with ammonia persulphate solution, until the lights have been reduced to their normal density. The reduction is best made, while the negative is still wet. With a dry plate negative it proceeds much slower. It passes in the same manner as with gelatine negatives, that is, the lights only are here also reduced, while even the finest delineation is not attacked in the shadows. A 2 per cent. solution might be the most advantageous. The color of the negative will become darker during reduction, when looked at from the surface, while in the transparency no essential change of tone can be observed. The reduction can be continued, until the negative has the normal density, after action of the ammonia persulphate not taking place during washing, the reducer washing out very quickly from the thin collodion film.

Translated by

HENRY DIETRICH.

MY MOUNTS.

THE accompanying letter and comments by the editor of the *Practical Photographer* of London will be read with interest as showing that our friends across the water have "troubles of their own," which, like their idioms are much akin to ours.—[EDRS.]

"We have received from Mr. C. H. Hewitt, of Gateshead, a letter which no doubt will deeply interest the wide-awake professional photographer, since he will probably read, to a greater or smaller extent between the lines, the story of his own doings. Public taste in the matter of mounts (and also of prints) is as fickle as a weathercock, as dead to harmony as the soul of Peter Bell, as impressionable to high coloring as a Fiji Islander. It is on this choppy sea of likes and dislikes that the photographer finds himself launched in a slender craft. Unless his personality is sufficiently strong to influence the judgment of most of his clients, he must choose the alternative of playing to the gallery, or his boat will inevitably sink.

"But let us first hear what Mr. Hewitt has to say, and then offer a few comments of our own.

"Dear Mr. Editor :

"Although I cannot yet number very many years as a professional photographer, I have had some varied experience already in the important matter of mounts, and as the ranks of professional photographers are continually being recruited by young men, the lessons I have learned may be interesting to a section of your readers.

"During my apprenticeship and while in situations, I must admit I paid little attention to the matter, or as to how the various mounts were received by the public; and it was only when I took down my own shutters that I found myself face to face with a somewhat important artistic and commercial problem. I began, however, with a plain white Bristol mount, round corners, silver edges, and name and address unobtrusively lithographed on front and back. I expect the silver edge was the salvation of those mounts, for I do not remember a customer objecting to them in any way. A traveler—who, of course, wanted to effect a sale—did once say, the photographs were all right, but would look better on "better" mounts. I fondly imagined, however, in those days, that the sitters thought most of the portraits, and that traveler's blandishments and flatteries were unavailing. When those were used up I had another lot, but this time the edges were plain, and the name, a signature, lithographed in fac-simile. And now my eyes were opened, for the sitters began to stigmatize the mounts as "common." I tried to show the difference between simple, unostentatious, plain mounts, and common, but it was no use. The remainder of that lot—having unprinted backs—was cut up for post-cards.

"My next order was for cream and grey Bristol, with both silver edges and silver blocking, but having removed to another town, I found a clientèle with more gorgeous ideas still, and though the mounts were characterized by some as "chaste" they were not looked upon with favor by the majority. They had to be used up, neverthe-

less, but when they were, I gave up trying a *via media* for a while and ordered two kinds of mounts. The one kind were cream on the front, with gilt blocking and gold bevel edges; the backs orange with printing in red. These I used for the cheaper class of work and they were, I believe, appreciated, especially perhaps their lurid backs. For better orders I had a thicker and slightly larger mount. (I enclose you one.) [No. 1. A white square-cornered mount, gold beveled, three buff lines round the print, and name stamped in buff at foot. Back lithographed in buff ink.—ED.] It has, as you will see, square corners and gold bevel, while the name and address is in quiet color stamping. For platinotypes I adopted the well-known Mantello, with silver edge and silver blocking, the mount being white. Although I do not care for white mounts in the majority of cases, yet I find the public nearly always prefer them.

“And then, sir, in an evil hour, I again allowed myself to choose a new mount which I liked, but which I found the sitters did not. It was a brown Bristol, with square corners and blind blocking. The lesson I should have learned before was once more forced upon me, and I got quite used to the remark, “It isn’t at all a nice card.” My better class mounts being nearly used up, I concluded that the best thing would be to try more white mounts, and as the somewhat popular initial, on a red wafer, at one corner of the mount, is not so objectionable, and is yet rather showy, I decided on the style which I enclose. The edges and blocking are silver, the back unprinted Bristol and the front enamel. Although remarks are often made about the “pretty back” of some mount or other I have always preferred to keep the back almost plain. One “registered design” I have seen shows a jester uncommonly like, and often mistaken for, Mephistopheles, who is condescendingly introducing to one’s notice the photographer’s name!

“These latest mounts, I think you will agree, will satisfy those who wish a certain attractiveness in the mount itself, and yet they do not obtrude themselves unduly. I find the plain Bristol back a great advantage, in that it admits of the negative number being readily pencilled thereon. The front, I prefer enameled, as I have found there is a danger of slight extra pressure in the rolling press squeezing the mount at the corners and edges, and producing a mark not unlike a greasy patch.

“If ever I get to that “earthly paradise,” Mr. Editor, where the public accepts the photographer’s decision in such matters, my ideal mount would be a suitable shade of brown, with about $\frac{1}{2}$ to $\frac{3}{4}$ of an inch margin round the print and an inch at the bottom. On this bottom space should be blind-blocked, or lithographed, or printed from a copper or steel plate, in small characters, the name and address. The edges might be plain or gold bevel, and the corners square. It is possibly too much to hope for a distinctively chosen mount in size, color and width of margin for each photograph in the commercial portrait studio. But in the one case or the other, the mount should be thick, yet not unreasonably so, and the platinotypes or carbons should be mounted as dry as possible, so that the mount might be flat.



PHOTOGRAPHED BY THE MISSES SELBY, NEW YORK.

PORTRAIT STUDY.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

“Possibly for the cheaper everyday work in P.O.P. or albumen, such a mount as I have sent you, with the red wafer, in one or other of its modifications of style, will best meet the public taste without being altogether distasteful to people of refinement and culture.

“I am, sir, yours faithfully,

“C. H. HEWITT.”

“The development of the mount on right lines has not only been hindered by crude public taste, a terrible obstacle in its way, but still more, if anything, by a sort of crystallization into fixed sizes brought about by the prevailing dimensions of albums. To fix the limits of an artistic product is to sap at once much of its vitality. Photographs ought to be of any and every size according as the photographer determines, and we look forward hopefully to the time when mounts shall seldom be ordered in cut sizes, but rather in large boards, so that the photographer himself can subdivide them into those dimensions which suit the particular work he is engaged upon. Beauty of any kind cannot be given in terms of inches.

“We are talking, however, of possibilities and probabilities rather than actualities. What is the right position for a photographer who has to make money, to take up in this connection? Our advice is founded on no small experience of photographers and their methods, and of the public and its peculiarities. Keep two or even three kinds of mounts in your stock, and let the client choose. If he asks your opinion let it be given firmly and decisively, and we venture to say that in 75 per cent. of cases, if you put the matter in a proper light, he will acquiesce with your judgment.

“Our greater photographers find but little difficulty in inducing the public to accept what they recommend. Mr. Ralph Robinson and Mr. William Crooke, each in his own particular way, have built up large businesses while adhering pretty firmly to their own views on mounts and printing processes. Even Mr. F. M. Sutcliffe, constantly lamenting as he does the failings of an uncultured world, has yet largely influenced those with whom he has come in contact to accept his judgment on artistic questions in photography.

“Have a little shelf or a show case especially for displaying the different styles of mounts and printing processes you can offer. Call the client's special attention to these, and ask him to determine which he would prefer; point out the failings of P.O.P. and white mounts, and so forth, to the best of your ability. Demonstrate after the manner of Mr. Crooke, how a warm print on a warm-colored mount of neutral shade harmonizes with most of the surrounding objects in the room, while the white or light grey mount and the glazed vignettéd purple print is a spotty, isolated portion, and, therefore, conspicuous and offensive. If you do all these things you will succeed in the majority of instances, and after doing it for a while it is surprising how you seem to gain strength. At last the difficulty ceases to be a difficulty, the public flock to your studio just because they want your typical work, and they neither question your style nor seek to depart from it. People of good taste are satisfied because they know the style is right, people of no taste are pleased because they find themselves following the fashion.”

USEFUL TESTS FOR PHOTOGRAPHIC IMPURITIES.

THE following article by Mr. Geo. Lurcock in a late number of the *Photographic News* will prove of value to many photographers who are desirous of testing their washing waters from time to time and in different baths, with a view to ascertaining if the chemicals have been entirely eliminated from the plates or prints which are under treatment:

"In order to ensure the permanence of the negative or positive image, it is essential that all chemicals possessing destructive properties be entirely eliminated from the print or film. The average photographer is content with prolonged washing, but the careful and exact worker will wish to prove conclusively the absence or presence of anything likely to prove detrimental.

"By the aid of the following tests the veriest tyro can tell whether his work is perfectly ready for finishing off. The print or plate should be immersed for a few minutes in pure water contained in a white porcelain dish, with occasional rocking, the water being then tested for the suspected substance.

"*Hypo.*—This can be detected in very infinitesimal quantities by means of a drop or two of silver nitrate solution, which gives a black precipitate or a dark brown to pale yellow coloration, according to the quantity present. The latter tint is best seen in daylight.

"*Mercury*—(in intensification).—One drop of a weak solution of iodide of potassium gives a red or orange precipitate, soluble in excess of the test. Sulphydric acid or ammonium sulphhydrate gives a black precipitate.

"*Lead*—(in combined toning and fixing).—Lead is tenaciously retained by paper, with the subsequent deterioration of the print. The latter should be immersed in weak acetic acid, which dissolves any lead present. With this, iodide of potassium will give a yellow precipitate, or bichromate of potassium an orange-red.

"*Iron*—(in platinotype and iron developers).—This is also held by paper, and causes yellowing of the print. Ferrocyanide of potassium painted on the same strikes a blue if this impurity is present.

"*Alum.*—This sometimes contains iron, and then should be rejected. A solution of tannic acid will indicate, by a blue-black coloration, the presence of this substance.

"*Sulphur*—(in sulphur toning).—Characteristic odor evolved when the print is burnt.

"*Ferricyanides*—(in reducers).—Ferrous sulphate gives a blue, and nitrate of silver an orange, precipitate or coloration.

"*Oxalates.*—A solution of calcium chloride gives a white precipitate.

"*Pyro.*—Milk of lime gives a purple coloration, turning to brown. These are the chief impurities met with, and these test solutions should be kept in little stoppered bottles in every darkroom. The small outlay and trouble involved will amply repay the operator. At the same time, he will train himself to do his work accurately and well.

"All plates should be finally varnished and thus protected from those chemical substances contained in the atmosphere which slowly attack the silver image, and prints, bromides especially, should similarly be rendered immune by saturating them in a solution of paraffin wax in benzine, blotting off the superfluous liquid, and allowing the solvent to evaporate spontaneously."



APPLICATION OF THE AMINES AS SUBSTITUTES FOR THE ALKALIES IN THE ALKALIC DEVELOPERS.

BY LUMIÈRE AND SEYEWITZ.

THE amines of the class of fatty acids, just as ammonia, from which they originate, possess strong basic properties, and the writers have tried to employ them in place of the ordinary alkalies in the alkalic developer. Practical experience has confirmed this hypothesis, and it has been found that these substances behave in the alkalic developer like real corrosive alkalies. All tests were made with ammonia, for comparison's sake, to see, whether the amines of the fatty acid class, which show such a great analogy with this base, behaved similarly towards the alkalic developers. It was found that ammonia cannot be employed practically as substitute of the corrosive alkalies or the carbonate alkalies in the development of the latent picture, with the exception of pyrogallic development, because it produces, owing to its property of dissolving bromide of silver, a strong color—or metallic fog, and even after a continued long development, the picture will not appear sufficiently strong. The amines of the fatty acid class do not behave the same towards the alkalic developers, as does ammonia, and they give results, which would be very interesting, if these substances did not possess a disagreeable odor, which, so far, has excluded their practical employment.

The first study of the writers was the action of the amines, when employed in place of the usual alkali in the hydrochinon developer. Methylamine and æthylamine act very energetically upon the hydrochinon developer. An addition of 0.5 cubic centimeter of a 33 per cent. solution to each 100 cubic centimeters of developer, as found in market, gives a very energetic developer, but in all cases a color fog is obtained, which will act stronger in proportion to the quantity of amine that was added. Dimethylamine acts less energetically, but will still cause a very quick development, and gives, when added in small quantities, very strong pictures, but it has also a tendency to color-fog. Trimethylamine is the only one free from color-fog, and pictures developed with it are very clear. Its action, in equal quantities, is less energetic than that of the methylamine and the dimethylamine, but if the quantity is increased, practically the same energy is obtained, as with the other two methylamines. If 10 cubic centimeters of a 33 per cent. solution of the trimethylamine are added to each 100 cubic centimeters of developing solution, a very energetic

developer is obtained, whose results are comparative with those of the paramidophenol developer, but much better than obtained by employing corrosive alkalies. The developer, mixed with trimethylamine, will also not attack the gelatine film, nor injure the fingers, as is generally the case, when a corrosive alkali is employed. The best results have been given by the following formula :

Hydrochinon	8 grams.
Sulphite of soda, free from water.....	35 “
Trimethyl solution, 33 per cent	100 cubic centimeters.
Water	1,000 “

Combined with the pyro developer the amines of the fatty class act about the same as in the hydrochinon developer. But the results are in this case still more interesting, because a much greater energy is obtained with this developer, than with the carbonate alkalies, and—if trimethylamine is employed—without formation of fog. Besides this, the developing solution does not become of brown color, as is the case when carbonate alkalies are employed. This result is so much more interesting, as so far it has not been possible to add corrosive alkali to the pyrogallic developer, without producing fog. The amines of the fatty acid class increase the developing power, and seem to play actually the part of the corrosive alkalies. In the course of experiments made by the writer, the following formula for a pyrogallic developer was found to be the best :

Sulphite of soda, free from water.....	30 grams.
Pyro	10 “
Trimethylamine, 33 per cent. solution	60 cubic centimeters.
Water	1,000 “

If corrosive lithium, which dissolves paramidophenol best, is replaced in the paramidophenol developer by the amines of the fatty class, particularly remarkable results are obtained, because so far no substitute for the corrosive alkalies had been discovered ; paramidophenol being little or not at all soluble in the solutions of the hitherto known developers. But the paramidophenol dissolves very easily in the three methylamines, which is so much more striking, as it does not dissolve in ammonia. The solution keeps just as well as the one prepared with corrosive lithium, and a still more energetic developer is obtained, than with the latter alkali. Here the trimethylamine gives, also, the best results of the three amines. If applied in sufficient quantity, stronger negatives are obtained than are furnished by paramidophenol developer with corrosive lithium, under the same circumstances.

The following proved to be the best formula :

Saturated solution of sulphite of soda.....	1,000 cubic centimeters.
Basic paramidophenol.....	10 grams.
Trimethylamine, 33 per cent. solution.....	150 cubic centimeters.

Translated by

HENRY DIETRICH.

MR. E. SANGER SHEPHERD ON PHOTOGRAVURE.

[Notes of a Lecture, communicated by Rev. F. C. Lambert.]

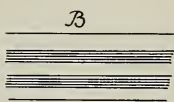
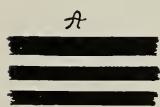
MR. E. SANGER SHEPHERD recently addressed a crowded gathering of the London Camera Club on the subject of photo-gravure. His discourse abounded with practical hints. For the convenience of our readers we jot down some of them, arranged, for convenience of reference, under several headings.

The Positive or Transparency.—Upon this, success primarily depends. It must contain as many “tones,” steps of gradation, degrees of scale, as are intended to be reproduced. It should commence with all but bare glass. If the original be light and delicate, as in a “silver print” drawing, so must the positive also be thin and delicate. If the original be strong and vigorous, as in a steel engraving, the positive must be bright and plucky. There are various processes available for making the negative. (1) If the reproduction is to be of the same size as the negative, then the carbon process is highly satisfactory for making the positive or transparency by contact, giving, as it does, at one operation, a reversed positive. “Standard brown” tissue may generally be recommended. (2) Flexible transparent films, *e. g.*, rollable film, is a useful means of copying through the camera, where alteration of size is needed. Being so thin, films of this kind can be printed either way round. (3) Wet collodion plates or gelatine dry plates may be used on the camera. Those known as process plates or lantern plates are good, because they are comparatively free from fog, and yield bright, clear transparencies. (4) Captain Abney’s method of using a bichromated film is also a valuable process for this purpose.

The procedure is as follows: An ordinary gelatino-bromide transparent film (such as is ordinarily used for negative work) is immersed for, say, three minutes, in a 2 per cent. aqueous solution of ammonium bromide, and then dried in the dark. Any coating of emulsion which may have got onto the back of the film is carefully cleaned off, and the back of the film is placed in contact with the negative, and printed with the aid of an actinometer. Development consists, as in the ordinary carbon process, of washing away, with warm water, the parts of the film not rendered insoluble by the action of light. At this point, several courses are open to us: (*a*) The positive may be used as it is (either way round), and is now a yellowish color, consisting of haloid silver salts in gelatine. (*b*) These haloid salts can now be blacked, *i. e.*, reduced to metallic silver, by any of the ordinary developers (in daylight), *e. g.*, pyro, metol, ortol, etc., and the process can be stopped at any stage. (*c*) Or, instead of developing (reducing) the silver salts, we can dissolve and remove them with the ordinary hypo-fixing bath. We have now a positive relief in colorless gelatine. This we can stain generally or locally by the application of any aqueous dyestuff, applied in a bath, or locally, with a brush. Such materials as potassium permanganate, Indian ink, or many of the aniline dyes, may be used. Thus it will be seen that this process possesses very valuable possibilities, being so flexible and open to almost unlimited modifications.

Graining the Plate.—Success depends, not only on the size, but also the right quantity of grain on the plate. These two factors must in each case be adapted to the positive and to the depth of etching. For example, suppose the original to be reproduced to be one of very little contrast, *i. e.*, all light tones, and full of gradation, from white paper to light gray, *e. g.*, like a “silver print.” In this case, the quantity of ink which the plate has to hold is small; therefore, the etching must not be deep. Hence, the grain here required is small in size, but the particles should be fairly close together, *i. e.*, we want a fine grain and plenty of it. This we get by stirring the dusting-box, and giving ample time for all the larger particles to settle down before inserting the plate. We also may leave it there a good long time, say ten minutes. Or we may repeat this process, if one graining be not enough. But suppose the original be one with some deep shadows, as well as fine lighter tone gradations. To get these deep tones we must etch correspondingly deep to get ink holding power. But to do this with fine size grain would mean under-cutting; the grain would be lost; the deep etchings would not hold the ink. In wiping the plate for printing, the ink would be carried away, and what ought to be deep shadows would print gray and patchy. To meet this, we must give the grain a two-fold character. First, we must have a small number of larger grains of dust. Being larger in size, the tops of the metal pinnacles will last after the smaller grains have been under-bitten, and, at the same time, a large number of small grains. Thus, for shallow etching, the large and small grains will act as protection; for deep etching, the large ones will still continue to act after the smaller ones have given way.

Mechanical Grain by the Line-Screen Method.—Mr. Sanger Shepherd fully explained (with screens and examples) how he gets a grain by using a single (not cross-line screen). This means three printings of the resist. First, the carbon is put in contact with the positive, and say, for example, printed eight minutes. Second, the resist is now put in contact with a single-line screen, and printed for one minute.



Third, the line-screen is now so altered in position that the lines are now at right angles to their previous position (*i. e.*, the screen or resist rotate through a right angle), and printing goes on for one minute more. The resist is now transferred and developed in the usual way. Reference to the accompanying diagram will show that the results are

not the same as though a cross-line screen had been used at one operation. At A is a screen of black lines and clear interspaces. Leaving out of consideration for the present the picture image already produced by exposure under the positive, we have at B a representation of the result of exposure under the screen in position A. The gelatine under the clear interspaces has been rendered insoluble in lines. This action will have affected a certain depth or thickness only. At C, the

line-screen has been put at right angles to its first position, and at *D* we see the effect of the additional exposure. We have, then, cut up our gelatine into square regions. Those shown clear have been protected by the lines of the screen in both its positions, and may, therefore, still be quite soluble. Those squares with lines in one direction only have had an exposure of one minute, and are, therefore, partly insoluble; while those squares with two sets of lines crossing each other have had a total exposure of two minutes under the clear glass of the line-screen. In development, then, we get little square towers of insoluble gelatine of different heights, according as they have had one or two minutes' exposure. These square towers take the place of the protective grain dust. The lecturer explained the usual procedure of rolling up and rebiting.

Stopping Out.—In order to see the bitten parts of a plate, it is customary to rub fine whiting dust into the depressions, so that it may be seen when the stopping-out varnish has to be applied. It, however, is found that the whiting is affected by the etching fluid, and mischief arises. But the lecturer pointed out that if dry, solid magnesia, which may be bought in the lump for this purpose, be used, instead of whiting, no evil consequences follow. This is a hint of much practical value.

Cleaning the Hands and Plates.—He also pointed out that if the hands be well rubbed with linseed oil, and then in fine, dry oatmeal, the ink could be easily removed from them. If the plate be cleaned with benzole (to remove the black varnish), and then rubbed with oatmeal in the same way, the black, sticky mess can be absorbed.

Preparation of the Etching Fluid.—A simple and expeditious way of getting a strong solution of the fluid is to suspend the dry iron perchloride in a canvas bag in a vessel containing a little water. In this way a solution dense enough to show 48 degrees Beaumé will form. This should now be placed in a shallow vessel and put in a warm, airy place, so that the free chlorine may pass away. For etching purposes, the various baths may vary from 33 degrees to 45 degrees. In etching, the point to note is that the fluid should steadily proceed to attack new portions of the plate. If any fluid lags—ceases to attack fresh parts, it is time to replace it by one of lower strength—less density. As we pass from more dense to less dense etching baths, the rate of etching increases.

As regards papers. The so-called plate papers were, perhaps, the worst, and the Japanese vellum and hand-made Dutch papers of Dan Guelder were the best.



VIGNETTE—A SHORT CHAPTER ON THE WORD ITSELF.*

THE study of etymology may appear but remotely connected with photography, but nevertheless a short history of some of the words which comprise its nomenclature is extremely interesting.

Photography has made but comparatively few words for its own use. It has been content to take words ready made from various sources to describe its methods and productions, instead of coining them for itself. It will be easily understood from this fact that some of the terms used are not exactly what they should be, considered from an etymological standpoint; but many of them have been in use for many years, and photographers, at least, do not regard them as strange, since they are familiar with them in a photographic sense, and they answer their purpose.

The word vignette is a notable example. It is often regarded by photographers as being one of their own, but it is by no means so. It was probably coined before

*From *Photography*, January 12, 1899.

the fourteenth century, long before photography was ever dreamt of, by the French or Flemish scribes, who so beautifully illuminated their manuscripts; and is derived from the Latin *vinea*—a vine—the word vignette itself being a diminutive of *vinea*, and originally signifying “little vine.” Words, like individuals, change, and though vignette was first used to denote the running vine tendrils springing from the initial letter in a manuscript, it eventually came to mean any small illustration which was not enclosed within a definite border, and such is its general meaning at the present time. Why the vine leaf entered so largely into the composition of ornament at the period mentioned, is perhaps, to be accounted for by the fact that the vine is so frequently mentioned both in the Old and New Testament, and more especially because Christ called himself “The True Vine.”

Readers who would like to see some of these early vignettes will find them in the Granville Room of the British Museum. A printed example of an old style vignette will be found in the edition of Cotgrave's Dictionary, published in 1660. The English index (by Sherwood) has a title page with a vignetted border.

The word “vignette” is not found in “Snelling's Dictionary of Photography,” published in 1854, but it is found in photographic periodicals a few years later.

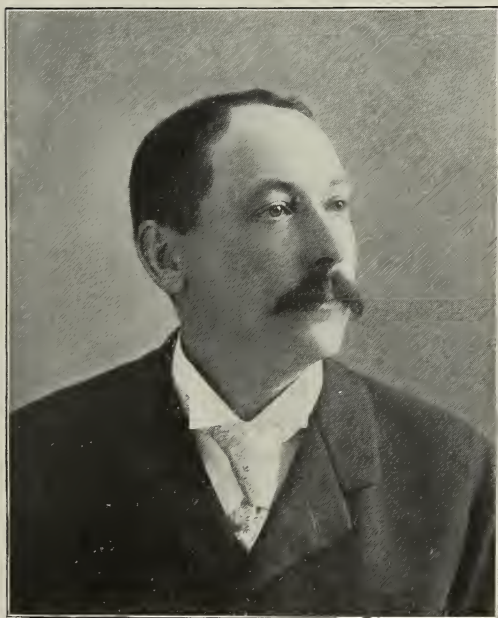
MR. JOHN STALKER.

OWING to circumstances beyond our control, it was impossible to give as extended mention of Mr. Stalker's death as we would have liked in the last issue of the BULLETIN. We therefore add to what we then said the following facts, which will be of interest to all who knew him in his busy life, and who, knowing, could not but love him for his whole-souled, genial manhood and his sterling qualities. Mr. Stalker

entered the employ of Horgan, Robey & Co. in 1869 as an errand boy, working his way up to salesman, and later to a partnership in the business.

His last illness was only of a week's duration, he having been at his desk on December 27th. His death occurred on January 3d, at the age of forty-four years.

His funeral, which occurred on the 6th, was attended by nearly all the photographers of Boston, and many from out of the city. The floral tributes were numerous and elaborate, and included pieces from the firm, the employees, the Photographers' Club of



New England, of which he was Secretary, and the American Aristotype Company. The tender memories left in the hearts of those who knew him, will remain green long after these have faded, and he will be greatly missed in the world which has been improved by his short presence in it.

PICTORIAL PHOTOGRAPHY: ITS DIFFICULTIES AND PLEASURES.*

By JAMES BURNS.

[Paper read before the Edinburgh Photographic Society.]

AN ancient philosopher hath put it on record that "in the multitude of counsellors there is safety." The pictorial photographer, in applying the proverb to his own case, might well give a new reading and say that, "in the multitude of counsellors there is danger." For certainly he has been advised, criticised, and traduced beyond measure, despite the modesty of his pretensions. Art critics, with no knowledge of the difficulties of, or latitude of personal control available in photography pictorially pursued, have assailed him on all sides, and exhausted their vocabulary of abuse in denouncing anything photographic that dared to lay claim to pictorial merit, and, with the confidence born of inexperience, have laid it down that photography is a purely mechanical art, and that at best the photographer is but a "snapper-up of unconsidered trifles." Professors of fine art occasionally address photographers, and, while giving them a kind of qualified praise for their attempts at more artistic results in their works, generally conclude by arguing them out of the delusion that their efforts can ever be of any real artistic merit, and offering the consolatory thought that, though the higher reaches of art are beyond their skill, they may be permitted to do valuable work for the advancement of art in making memorandums for the use of painters. What the pictorial school have had to humbly accept as their due from those outside their own ranks, is as nothing compared to what they have been honored with from within. Their photographic brethren, who see nothing commendable in their work, never tire of reminding them that painters and art critics despise their productions, and curtly sum up the whole matter by giving a recipe for the production of a pictorial photograph which is generally at least commendable for its brevity, if not for its accuracy.

A writer in one of the oldest photographic journals seems to find the whole sweetness of his life in abusing the pictorial school; and his great ambition is to write the epitaph of that school, or don the mantle of Gibbon, and astonish the world with a new "Decline and Fall." Yet, withal, pictorial photography progresses apace.

Much of the adverse criticism passed on the pictorial school is the necessary sequence of any departure from traditional methods, and of what had hitherto been deemed the correct thing; on the other hand, for much of this criticism many photographers who take up the pictorial phase of photography have only themselves to thank. The fatal facility with which one photographer may imitate to a certain degree the work of another is responsible for this. If a leading worker on pictorial lines produces a striking picture, treating some new theme successfully, immediately a host of imitators arise, and, lacking in most cases the power of originality themselves, play with varying success on the same or similar themes till all are wearied with the monotonous repetition.

Another reason for much of this criticism is the want of faith on the part of photographers in the power and possibility of their own art. They seek by diverse methods to give their pictures the appearance of similarity to one or other of the monochrome methods adopted by artists. They seem delighted to be praised for a fancied or genuine resemblance to a wash drawing or mezzotint in their pictures. This weakness is finally hit off in a couplet from one of the weeklies:

"You may fake, you may vamp up your print, as you will,
But the trace of the camera lurks in it still."

And why should it not? Photography in some respects is unexcelled by any of the existing methods of picture-making in monochrome; particularly is this so in the rendering of tone values between light and dark. Until the possibilities of photography, as a means of picture-making, have been fully exploited, it is derogatory to the advancement of pictorial work to imitate any other method of monochrome. To do so is to practically accept as correct the limitations which critics would fain shackle upon photography. We are not daring enough in our efforts at picture-making; and

in encouragement of any attempt to venture beyond the bounds of the conventional, we may console ourselves with the thought that what is oftentimes the heresy of to-day becomes the creed of to-morrow.

Passing now to the subject proper of this paper, it seems advisable to remind our critics that there are difficulties to be surmounted in producing a pictorial photograph which are not encountered in the production of what, for want of a better term, we may call the topographical photograph; and, further, that there are powers of personal control available to the pictorial worker which give wide latitude from conception to finish of modifying and improving his pictures.

The photographer who sets out on his pilgrimage in quest of the pictorial has many a Slough of Despond to wade through ere he reaches the goal of success. Unlike the painter, whose whole training is such as to fit him for the work he is to undertake, the pictorial photographer has to begin by unlearning much that was useful to him in the earlier part of his career. All his cherished notions of what was the correct thing in definition, exposure, development and printing, must be modified and subordinated to the idea he seeks to convey by his picture. A thorough knowledge of technique is absolutely essential, but he must not be its slave, and should rather seek to mould the powers thus given him to serve as an aid to the realization of his aims. By under-exposure he may obtain more contrast from a flatly lighted subject; by over-exposure he may modify harsh contrasts; in development he may modify to a great degree for the particular end in view; in printing he has the most control of all, a power which no one who has not tried what can be done in this respect can at all realize.

His knowledge of these principles of art upon which picture making is based, are, more often than otherwise, learned in a perfunctory school, and, when he sets out, say in landscape work, to put these principles into practice, he is bewildered by the difficulties which beset his path. Unlike the painter, who may choose what he wants, and reject or modify any feature to his taste, the photographer can only select. This is often a difficult problem, and it is only by patient study of his subject, and a full knowledge of what effect the photographic plate will render, that the best effect of lighting and suggestion of the idea sought to be portrayed can be obtained. The glamor of color often leads him astray, and it is but slowly that he learns successfully to produce in monochrome the effect desired. To get the best effect, the judicious use of isochromatic plates and a yellow screen are of invaluable service in many, if not in all, subjects. Isochromatic plates and a screen help to get over one weakness of photography, the false rendering of light and shade. It seems impossible in some subjects, particularly where sunshine is sought to be portrayed, to adequately render this effect successfully, and, though shade can be rendered more successfully, it is rarely that we see in a photograph that luminosity of shadow which is always to be seen in Nature.

The question of definition, or the amount of detail which may be rendered successfully in a pictorial photograph, is one of the greatest difficulties to contend with. According to the critics, rack the lens out of focus and it is done. Well, it sounds easy. This is the expression of opinion of those who arrogate to themselves the monopoly of truthfully rendering things as the eye sees them. Has any human eye ever seen a picture, it matters not what it be, as the topographical photograph renders it? The eye is not an inert instrument like a lens, and in looking at any subject is never, even for a second, at rest, and seems, without any effort of the will, to be moving more or less across the whole field of vision. The eye never sees in Nature those hard outlines of the ordinary photograph which have been too readily accepted as an inherent defect of any photographic rendering of a scene. In Nature there is always atmosphere present, which softens and subdues what is harsh and inartistic in a photograph pure and simple. Let us for a moment try and recall any scene we may have visited and project on our mental vision a picture of the same, and what do we find? We cannot recall the infinite detail that must have been present; we only remember the features that impressed us. This leads to the conclusion that even from the point of truthfulness, as the eye sees it, excessive detail is an error, and, from the pictorial point of view, the result should approximate to a kind of compro-

mise between the visual and mental impressions. What these critics often forget, too, is that in many subjects treated pictorially, detail is almost entirely absent, and notably in atmospheric and evening effects. There occurs to my memory at the moment as an example that fine picture "Requiem," by Horsley Hinton, in which detail is almost entirely absent, and to have introduced detail would have been a distinct error. This picture will be familiar to most of you, having been reproduced in the *Amateur Photographer*. Even in subjects well lighted, this absence of detail is not to necessarily mean a fuzzy picture. Softness and breadth is what is aimed at, and it is not easy to obtain such. Personally, I have found this desired quality so difficult to obtain with the ordinary type of lenses that, during the past year, most of the work has been done with a set of uncorrected or spectacle lenses. The results are delightful to me, at least. With such lenses soft images are obtained without perceptible blur, just a softening of outline and nothing more. Later on I hope to show you a few results on the screen.

Pictorial landscapes in which figures play a dominant part are so full of difficulties that the average photographer, with his perfunctory training in art principles, may wisely leave them alone. On the other hand, there is a wide field for figure subjects of outdoor life and work which the photographer may attempt with more success. If the landscape be made subsidiary, and the figures the point of interest, many happy subjects may be obtained. Any attempt at posing models found among scenes of rural life and work usually results in failure. Successful effects can be had but by watching and waiting, and it requires a nicety of judgment and alertness of action to decide the right moment for exposure. If the portrayal of motion be aimed at, the difficulties are increased, for the line of demarcation between a blurred image, arrested motion and a natural action is very narrow.

Thus have a few difficulties in the pursuit of pictorial work been commented upon, and, though the difficulties are many, the pleasures are great.

Once become imbued with the love and desire to portray nature pictorially, and photography, to the amateur at least, rises to a higher level than that of a purposeless task or the mere pursuit of a hobby. It becomes an abiding source of pleasure, and all seasons may and can furnish us with subjects for pictures. We will, by the necessity of careful observation, be brought into closer touch with Nature, and much of her phenomena which lay unseen before will be revealed to us. Thus we may not only gratify our desire after pictorial rendering of the scenes and subjects which interest and attract us, but in our pursuit find that pictorial photography, followed out on the lines demanded by the end aimed at, may become a source of education and culture, as well as an abiding pleasure.

ENGLISH NOTES.

Development of P. O. P.—Mr. J. Sterry recently communicated to the Royal Photographic Society the result of some late experiments in developing P. O. P. prints, which had received but a very slight exposure; *i. e.*, only enough to show a very faint image. Hitherto, developed prints have usually shown a general fog or degradation of the high lights. He finds this defect can be met by plunging the print first into a dilute acid bath previous to printing. Various acids can be used. But he finds a 2 per cent. bath of hydrochloric acid satisfactory. Time of immersion, one minute. The print is then washed, and may at once be developed in the acid ferrous oxalate, or any of the ordinary alkaline developers. Usually, a small quantity of bromide is desirable. The print is still amenable to the usual toning operations.

Mr. J. E. Johnson on Line Screens.—Mr. Johnson has given much attention for years past to the making of line screens for photo-

mechanical purposes, and recently made a communication to the Royal Photographic Society, in which he drew attention to one or two points of considerable practical importance. He finds that there are, on an average, just about 40,000 grains or molecules of silver per square inch available in a developable negative. If, then, the ruling of the screen be of suitably adjusted fineness, we might entirely obliterate any visible screen-grain effect. There can be no gain in having a larger number of screen-grain dots than there are molecules of silver in the negative. Another practical limit is set by the ink. Owing to insufficient grinding of the ink pigments, the finest dots become obscured by large ink grains. And, again, irregularities of the surface of the printing paper preventing sufficiently close contact were another set of disturbing factors. By a method of superposition in the optical lantern, he demonstrated how a very small error in ruling might be detected. Thus the error between a 100 line and one of 101 lines was clearly visible, although the actual error was less than $\frac{1}{200000}$ inch. Under present conditions, as a matter of actual practice, very little, if anything, was gained by using screens having more than, say, 150 lines. (Colonel Waterhouse mentioned that his experience indicated that 200 lines was the practical limit for photo-zinco work.) The imperfect grinding of the ink often rendered work finer than $\frac{1}{250}$ inch labor lost, and in fine work it meant that the block needed frequent washing.

F. C. LAMBERT.

SOME NEW METHODS OF DEVELOPING DAGUERREOTYPE PLATES AND PHOTOGRAPHING ON COPPER.

BY COLONEL J. WATERHOUSE, I. S. C.

(Continued from February number.)

I HAVE with me a series of plates, taken yesterday, which will, I think, very fairly show you the advantages of the new method. The plates were all sensitized in the same way, about sixty seconds over the iodine, thirty seconds over a solution of chloro-bromine (1:40), and again iodized ten to fifteen seconds. The first two plates exposed for five and ten minutes were developed with mercury, but showed very weak and poor images. The next plate was washed over, after sensitizing, with a solution of gum, sugar and tannin, and exposed while moist for only three minutes, and developed with acid, iron and silver; it shows a good clean image, but is rather over-exposed for viewing as a positive. A plate was then sensitized as before, and washed over with some of the same gum and tannin solution, to which a little of the orthochromatic tincture was added, and exposed moist for only one and a half minutes, and developed with the same developer. This gives a very clear image, but is also over-exposed, showing the extra sensitiveness given by the orthochromatic tincture. Finally, a plate was sensitized as before, exposed for three minutes, and developed with the same iron and silver developer as used for the

others. The resulting plate is very poor and under-exposed, though the image shows more clearly positive than on the other plates. This result shows, I think, very conclusively the advantages gained by the use of the organic sensitizer, especially in combination with the erythrosin-silver orthochromatic tincture. These two series of plates also show that the new method of development is quite practical, and really seems more certain than the old method with mercury. The deposit with acid iron and silver is also much thicker and stronger, and could more readily be converted into a resist for an etching fluid.

One feels rather committing a sacrilege in bringing down to the common level Daguerre's beautiful process which has so long remained unique among photographic methods, but if it is to give it a new lease of life Daguerre himself could not object.

Ferrous oxalate can also be used as a developer, but acts like an alkaline organic developer in giving only a thin negative image.

I do not propose to enter into the theory of the subject; my results would seem to show that the latent image produced by light on the Daguerrean plate is of the same nature as that on the wet or dry collodion plate or on the gelatine dry plate, and can be developed in exactly the same way,* but beyond that they also seem to show that the underlying silver of the plate which is generally supposed to perform the rôle of sensitizer or halogen absorbent when a Daguerreotype plate is developed by mercury, is quite unequal to the task when an ordinary wet or dry plate developer is used, and some additional organic sensitizing is necessary to shorten exposure; and this is the case even when the developer contains free silver in a form ready for deposition.

Further experiment will be necessary to show the method of procedure most suitable, either for ordinary purposes or for photo-mechanical work, and whether, in the latter case, it will be better to obtain a strong image directly by acid development or by the intensification of the weak image produced by the ferrous oxalate or alkaline development.

Some form of intensification or substitution of a more acid-resisting metal for the silver will be absolutely necessary, and there are several metals to choose from, such as gold, platinum, palladium, mercury, uranium, manganese, cobalt, nickel, and others. These metals may be applied by electric deposition, or by a chemical substitution, as in toning or intensification, or an engraved image may be produced by electrical etching, or by biting with suitable mordants. A dust grain would probably prove useful in half-tone work.

It is, however, a question whether even a modified Daguerreotype method would be so practically useful and convenient as the enameline and other chromo-colloid methods now in use for half-tone blocks or heliogravure. For ordinary purposes the fact of the image being reversed and not capable of yielding copies, must always more or less militate against it.

*I find that this identity in principle of the Daguerreotype and the collodion or other wet development processes, was established by Carey Lea in 1865 (*Photo. News*, IX, p. 417). He says that it might be possible to develop an impressed Daguerreotype plate in the moist way as with a collodion film—but does not seem to have tried the experiment.

For photo-mechanical work it would certainly be desirable to dispense, if possible, with the use of the highly polished silvered plates necessary for the Daguerreotype process. The silver is a needless expense and brings in difficulties in etching and printing.

In the Society's Journal for 1882, page 100, there is a short paper of mine on "Photographing on Copper," in which I described some methods of obtaining photographs on copper plates, either in the camera or by contact printing, suitable for engravers to work upon by hand. At that time I sensitized the copper plates by dipping them in weak bromine water or a solution of cupric bromide, but this gave me a powdery deposit which did not work quite satisfactorily when developed with pyro and ammonia or ferrous oxalate and fixed with cyanide of potassium or hyposulphite of soda. I have lately repeated these old experiments, but by sensitizing the copper plates by fuming with iodine and bromine, like the silvered Daguerreotype plates, I have obtained very much more reliable and certain results, which seem to promise some practical use for the method in photo-mechanical work on the lines I have indicated for Daguerreotype.

I have also found that copper plates prepared in this way possess considerable sensitiveness in color, though so far I have not had any signs of reproduction of color. This sensitiveness, moreover, seems to vary according to the length of exposure of the copper to the fumes of the sensitizing agent and the tint produced, so that plates may be prepared specially sensitive to different colors or parts of the spectrum.*

I have obtained positive pictures on bromized copper developed with mercury, but they are not very satisfactory. Isodized or iodo-bromized copper seems less sensitive than the bromized or chloro-bromized.†

An iodo-bromized plate exposed in the camera for ten minutes and developed with ferrous oxalate gave a thin black negative image, very much like those developed on the silvered plates with the same or an ordinary alkaline developer.

Some most interesting results have been obtained by copying the color scale by contact upon copper plates bromized in varying degrees of intensity, and showing very different colors by direct or reflected light, in nearly all the tints of the chromatic scale except the green.

For instance, a plate iodo-chloro bromized to a deep greenish yellow color and developed with ferrous oxalate was perfectly insensitive under the green, yellow or red glasses, and the darkest image was under the deep blue cobalt glass, the lighter blues and the two violets also showing.

Another plate sensitized in the same way, but showing a deep yellow color with a beautiful purple reflex, was even less sensitive to the less refrangible colors than the first plate, though exposed double the time, and only the dark blue, red-violet and lavender glasses gave an impression.

(To be concluded.)

*It should be noted that Becquerel investigated the sensitiveness to light of the haloid compounds of copper (*La Lumière, ses causes et ses effets*, Vol. II, 68, 96). He also noticed the sensitiveness of the bromide and the chloride to the less refrangible rays of the spectrum, and particularly to the yellow rays about D. He gives diagrams of the three spectra of the iodide, bromide and chloride.

†In 1841, Fox Talbot patented a method of developing iodized or bromized copper plates with mercury or with the fumes of sulphuretted hydrogen.

SOCIETIES



THE Postal Photographic Club has elected the following officers for the coming year: President, Albert J. Le Breton, of Washington; Secretary and Treasurer, F. O. Congdon, of New York.

This Club is made up of amateurs in different States in the United States. It has been in operation since 1885, and issues an album of about seventy-five prints every month, these prints being contributed by the members, together with a notebook for criticisms. The Club has done, and is doing, a good work.

THE second annual exhibition of the Y. M. C. A. Camera Club, of Brattleboro, Vt., has recently been held, at which over six hundred photographs were displayed. The exhibits were divided into three classes, the first including portraits and animals, the second exteriors, landscapes and marine views, and the third interiors. The exhibit was very successful, both in point of number of prints shown and quality of work.

A NEW Camera Club was organized in Bristol, Pa., in the latter part of January, with the following officers: President, Llewelyn Davis; Vice-President, Jesse O. Thomas, Jr.; Secretary, Edgar A. Smith; Treasurer, Philip J. Blackwood.

THE Oregon Camera Club is holding a series of instruction evenings, in which some prominent member of the Club or photographic worker gives a talk and practical demonstration upon some special feature of photography. This Club is said to be the fifth largest photographic organization in the United States, having a membership of one hundred and seventy-eight, and is free from debt.

The following officers have been elected for 1899: President, William H. Walker; Vice-President, J. W. Holmes; Secretary, Milton P. Goldsmith; Treasurer, F. A. French.

THE Y. M. C. A. Camera Club, of Rochester, N. Y., has elected the following officers for the coming year: President, C. A. McAfee; Vice-President, J. E. Williams; Recording Secretary, T. C. Camp; Corresponding Secretary, A. S. Osborn; Treasurer, E. H. Handy.

THE Utica Camera Club was organized on the evening of February 3d, with fifteen charter members, the following officers being elected for 1899: President, D. Vaughn Ely; Vice-President, H. H. Wells; Secretary and Treasurer, M. C. Brown.

THE Mettowee Amateur Photographic Club was organized in the latter part of January, at Granville, N. Y., with the following officers: President, F. V. Ives; Vice-President, Mrs. Potter; Secretary, Daniel Edwards; Treasurer, Miss Maddock.

THE annual meeting of the Mobile Camera Club was held on January 13th, on which occasion the following officers were elected: President, Hugh Rolston; Vice-President, C. S. Shawhan; Secretary, Richard Hines. The Club is in a prosperous condition, and has just secured a permanent home for itself.

THE Chicago Society of Amateur Photographers, at its recent annual meeting, elected the following officers for 1899: President, T. George Hislop; Vice-President, E. M. Murray; Secretary, F. F. Gaylord; Treasurer, George H. Kittoe. This Society is in excellent shape, both financially and photographically, and its programme for the month of February shows a very interesting list of meetings and demonstrations. It is a member of the American Slide Interchange, and is also associated with the International Lantern Slide Interchange, which gives it an opportunity to study the best work of a number of the foreign societies.

THE Tacoma Camera Club has just been organized in Tacoma, Wash., with the following officers: President, Arthur G. Prichard; Vice-President, Mrs. M. W. Graff; Secretary, Mrs. J. H. Scott; Treasurer, Frank G. Taylor.

It will doubtless be of interest to amateur photographers throughout the country to know that the Committee of the Association Belge de Photographie are to hold an international exhibition of lantern slides, which it is proposed to divide into three classes: artistic, scientific and architectural, and for which medals will be given for the best sets of twelve slides.

The last day for receiving these slides will be October 31st, and full information may be obtained from the Secretary, 97 Avenue Burgmann, Brussels.

The slides will be shown, not only in Brussels, but also in Gand, Liege, Louvain, Antwerp, Namur and Courtrai.

THE second annual salon and exhibition of the Pittsburgh Amateur Photographers' Society was opened on the 1st of February before a large audience of enthusiastic admirers. Out of more than two thousand pictures presented for acceptance in the salon, two hundred and eighty-three were hung, and they, of course, attracted the greatest attention.

A number of well-known amateurs from abroad were represented in this collection, as well as many of the best of our own craft.

The success of the last year's exhibition and the prospects for the present, seem to indicate that the Society is sound in its judgment in the matter of holding the exhibitions on the lines it has inaugurated.

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PHOTOGRAPHED BY D. H. ANDERSON.

STUDIO WORK.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

APRIL, 1899.

No. 4.

THE LAY PRESS AND PHOTOGRAPHY.

ARE the inaccuracies and misstatements reported and exploited as news items and information by the lay press as frequent and glaring in other fields of science as in photography?

This is a question which must often occur to those who keep at all in touch with the various improvements, discoveries, and wonderful goings on in the photographic field, and is one which has come to be important at this time, for if facts and even possibilities in other fields are subject to such a strain as they are in the field of photography, it would seem better for the public to do without these sources of information (?) and rely entirely upon guess work for its knowledge regarding the progress of science, art, medicine, and kindred topics, for surely no information is better than false information, and the man who frankly admits that he does not know is worthy of far greater respect than he who speaks profoundly on topics which his own words prove (to those who know) that he is wholly ignorant of and wrongly informed concerning.

Where we read, for instance, that in a certain murder trial a set of kinematograph pictures were introduced as evidence, and the claim made for them that they described the scenes of the crime, with the explanation that, "The instrument which was kept in the room where the murder was committed *happened to be working at the time, and recorded the details of the killing,*" we must confess to a feeling of incredulity to say the least; and again when we find a prominent English photographic journal calling a well-known author to task, by name, in the following manner, it looks as if the time had come for a vigorous protest.

“ To Mr.——

“ You have the reputation, sir, of writing novels and stories which are based on scientific subjects, the technology of which is always assumed to be correct, because you were once a master, and, therefore, felt the necessity of having something more than a bowing acquaintance with the ologies and isms. But if the way in which you mention photography in one of your recently published short stories be taken to indicate the extent to which you have familiarized yourself with the terminology of the black art, you have something to learn before you can feel quite sure that to the photographic eye your technical references will always ‘scan’ properly. Thus, in the story referred to, you make two of your characters, at a distance of 2 miles, experiment in thought transference. Each sat in his own room, and an attempt was to be made to photograph any phantasm. One of the two gentlemen did see a phantasm. Sir, according to you, but (we quote your own words) ‘he had not the instant presence of mind to snap the camera that lay ready on the table beside him.’ Now, this is very groggy photography, indeed. The apparition was seen at night in an ordinary room, and you assume the possibility of securing an instantaneous photograph by the light of a gas jet. It is out of the question, sir. Then the camera ‘lay ready on the table.’ It was, therefore, a hand camera. What was it focused on? or was it focused? Then you speak of ‘snapping’ the camera. You don’t do anything of the sort, otherwise the camera would be rendered useless. You ‘snap’ or rather, release the shutter, which makes the exposure. Excuse us, sir, for drawing your attention to this defect in an otherwise admirable little story. We shall look for better photography in your next.”

The cases cited are only samples, and more of the same kind are to be found almost daily.

It is fast becoming a repetition of the old story of the boy who cried wolf so often when he only wanted company, that when the wolf really came and he needed assistance his cries were not heeded because they were not believed. Many new and important discoveries and developments are being made in photography from time to time, and it is probable that many more will follow in the near future. If the public, meantime, has not become totally incredulous, their announcement may be anticipated with pleasure and a due appreciation, but otherwise they are apt to be met with ridicule and incredulity.

Of course, we don’t accuse our lay brothers of intentional wrong doing in this matter, and readily believe that no one regrets half as much as they, the appearance of articles that cannot but make them appear ridiculous to many of their readers. But may we not expect of them a more careful inspection of these matters before they are published.

In this day of universal photography, it would seem easily possible to have some one on the staff with sufficient photographic experience to enable him to suppress such items as are, to say the least, manifestly impossible and ridiculous, thus saving humiliation and doing the public a service that would be appreciated.

Items of Interest

THE very particular attention of all photographers who are intending to exhibit at the forthcoming convention is called to the new rule, which is No. 12, and which provides that all exhibits will be entered under a number given them by the Vice-President, and shall not contain any name or marking that shall reveal the identity of the exhibitor. Exhibitors' names will be attached after awards are announced. Under this ruling prints must be mounted upon plain cards and framed without the name of the exhibitor appearing in any place upon the surface of the picture, mount or frame, and failure to comply with this rule will throw out all work, no matter how meritorious it may be. It is to be hoped that all intending exhibitors will keep this fact prominently in mind and thus save themselves great disappointment.

THE second annual trip to this country of Mr. H. Snowden Ward and Mrs. Catharine Weed Ward, with their unique lectures, "Shakespeare at Home" and "The Real Dickens' Land," will have closed by the time this number of the BULLETIN is in the hands of its readers, and those who had the pleasure of hearing their lectures and viewing the slides will congratulate themselves upon having enjoyed a remarkably fine and interesting entertainment. The number of views which go to illustrate these lectures, and the unusually excellent character of the slides, contribute greatly to the evening's enjoyment, and one who is at all familiar with either of the two authors cannot but gain a much greater familiarity and more intimate acquaintance with them under the leadership of Mr. and Mrs. Ward.

It appears by a recent decision of the executive, that all visitors will be allowed to use their cameras in the grounds at the Paris Exposition of 1900, without restriction, on the payment of a fee. This decision will undoubtedly be received with general approval by those who intend to visit the Exposition.

At the recent Convention of the Photographers' Association of Pennsylvania, held in Wilkesbarre, it was unanimously voted to hold the next Convention at Pittsburgh.

The Convention was well attended, and the exhibits of a high order, notwithstanding the fact that it occurred at the time of the very heavy snow storm, which almost blocked traffic in this part of the country.

Professor Griffith delivered a very interesting address, which was greatly enjoyed.

WE are in receipt of the following circular letter, which explains itself, and which we take pleasure in laying before the photographic fraternity, many of whom will be interested in its contents :

NOTICE.

DES MOINES, IA., January 27, 1899.

We beg to notify you that The Robt. Dempster Company have this day sold their business in Des Moines, Ia., to the Des Moines Photo Materials Company, who assumes all indebtedness of The Robt. Dempster Company incurred by the Des Moines house.

We take pleasure in recommending the Des Moines Photo Materials Company to you for the same courtesies that have been extended to us in the past.

The Robt. Dempster Company will continue the business at Omaha, as heretofore.

Very respectfully,

[Signed] THE ROBT. DEMPSTER COMPANY,
By ROBT. DEMPSTER, President.

Referring to above notice, we desire to say that we have purchased the Des Moines interest of The Robt. Dempster Company, and solicit from you the same courtesies that have been extended to them.

Very respectfully yours,

DES MOINES PHOTO MATERIALS COMPANY.

Signed :

JOHN VERRAN, President, late Secretary The Robt. Dempster Company.

CHARLES SELLNER, Vice-President and Treasurer, late Vice-President The Robt. Dempster Company.

GEORGE STRASSLER, Secretary, late Bookkeeper The Robt. Dempster Company.

References :

DES MOINES SAVINGS BANK, Des Moines, Ia.

ROBT. DEMPSTER, President The Robt. Dempster Company, Omaha, Neb.

The management remains the same as in the past.



WE note, with interest, that a strong effort is being made to organize a department of photographic optics and mechanical photography, photo-micrography, photo-chemistry and other various applications of photography in connection with the Chemical Section of the Franklin Institute of Philadelphia.

The Chemical Section has lately come into possession, as the residuary legatee, of the very extensive and valuable collection of scientific and chemical books and apparatus belonging to the late M. Carey Lea, so well known in the photographic world, and the proposed organization is the result of efforts of those in charge of the movement, including Mr. Fred E. Ives, Mr. Charles F. Hines, Mr. D. A. Partridge, Mr. W. N. Jennings, Mr. F. M. Sawyer, Mr. Lewis E. Levy, Mr. W. H. Greene, Mr. W. O. Griggs, and Mr. John Carbutt.

At the state meeting of the Franklin Institute held in February, Mr. Louis Edward Levy exhibited and described a new acid blast process of his own for etching and photo-chemical engraving, and Prof. Arthur J. Rowland read a paper on the Photo-metry of Incandescent Lamps, suggesting a special plan for determining their candle-power.



THE Pennsylvania Academy of the Fine Arts announces that, under joint management of the Academy and the Photographic Society of Philadelphia, the Philadelphia Photographic Salon for 1899 (second year) will be held in the gallery of the Academy on October 22 to November 19, 1899.

The success of the first salon has conclusively demonstrated the existence of a field for an American exhibition devoted exclusively to pictorial photography in its highest sense.

The aim of the salon is to show only such pictures produced by photography as may give distinct evidence of individual artistic feeling and execution, rigidly selected by a jury composed of well-known artists and artistic photographers, whose certificate of acceptance shall be the only award.

All those interested in the purpose of the salon are invited to give it their cordial support and encouragement, both by submitting specimens of their best recent work and by making it favorably known to others.

This preliminary notice will be followed in due course by a full circular, with all details, entry forms, etc.



OBITUARY.

IT is with deep sorrow that we learn of the death of Mrs. Jennie A. Edmondson, the wife of Mr. George M. Edmondson, of Cleveland, President of the Photographers' Association of Ohio.

Mrs. Edmondson had been an invalid for many years. Notwithstanding the suffering which she constantly endured, she endeared herself to all who knew her by her cheerfulness, patience and sweet disposition. She passed away quietly on the evening of February 17th at the home of her parents. Mr. Edmondson will receive the heartfelt sympathy of his many friends in his great bereavement.



PROFESSOR GEORGE GIES, an old-time expert photographer and crayon artist, and one of the first inventors of motion pictures, died on the 16th of January at the Massachusetts General Hospital.

Professor Gies had been almost continuously employed during the last sixteen years by Mr. B. F. Keith in connection with his theatrical business. He died at the age of fifty-four, leaving a widow, but no children.



CONVENTION DUTIES.

WHEN the bromide patent was abroad in the land and the process monger was waxing rich, the poor, duped photographer changed his collodion formula as often as he had the opportunity (and the means) to buy the latest secret one of some noted operator. His competitors were his enemies from force of habit. As each believed the other's success due to a better process, the estrangement was not easily broken. With the organization of the old National Photographers' Association, these restrictions began to give way. In technical qualities, most especially, photography advanced rapidly. Exchange of ideas suggested new ones. The occupation of the process monger was gone. The civilities of the day were exchanged among competitors in place of the stony stare of former days. The dry-plate worker of recent date can never fully realize the petty jealousies and the bickerings of the old wet-plate man. It took some time to pierce his crust, but when he was touched he gave all he had. The life of the old society was not in vain. The marvelous growth of photography is largely due to these early conventions. They furnish the feast which the journals soon spread. The influence of the convention is far-reaching. Not a photographer in the land, though he never attended one or sent an exhibit, but is the better for their existence. While admitting that all are under obligations to the Association, and should feel it their duty to help sustain it, we are not going to ask you to come to the meetings or prepare an exhibit because of that obligation. The personal benefits are so great that, should these not appeal to you, it would be useless to appeal to your sense of duty. As a matter of practical education, the school of photography conducted by the American Aristotype Company is one of the most important features of the convention. Its corps of instructors are the best obtainable. The value of seeing a photographic manipulation is too well known to need any argument in its favor. The Art Annex is a school of infinite variety, in which he learns the most who sees the most. Professor Lorado Taft, of Chicago, one of the best known art educators of the country, will give an art lecture, illustrated by stereopticon slides. Mr. Hollinger, of New York, will give one of his characteristic talks on "How to Get Good Prices." The royal manner in which the Association has been entertained at Celoron is a sufficient guarantee of a good time coming. The educational advantage of preparing an exhibit will well repay you for your time and material, without any regard to after results. Entuse a little enterprise into your work. It will relieve the drudgery. Lake Chautauqua is the ideal spot for an outing trip. For any information in regard to transportation, hotels, or for entry blanks, prize lists, etc., apply to

GEORGE B. SPERRY,
Secretary Photographers' Association of America,
 319 Summit Street,
 Toledo, O.

THE ARTIST AND THE CAMERA AS RECORDERS OF HISTORY.

BY JAMES B. CARRINGTON.

WE owe a very large debt to the men who have followed our armies in peace and war, and who have given us in sketch and photograph an impression of various scenes. The pictorial writing of history has become a prominent feature of our time, and by it words have been given tangibility and more vivid meaning. In the weekly periodicals that were published during the war of 1861-65 there appeared a remarkable series of drawings, giving, as no writing alone could, an impression of actual war, with its hardships and horrors. Many of these illustrations, no doubt, were largely creations of the artist's imaginations, war compositions, but there was enough truth in them to give them distinct historical value. The dry plate and films of the present-day hand camera were not yet perfected, and photography in the field was a laborious as well as a hazardous occupation. In the war of 1898 both artist and photographer figured with distinction, and their drawings and prints have helped us to understand what our soldiers and sailors have been through.

No one will deny the superiority of art to photography, and the capacity of the man with the pencil to give movement and a semblance of life to scenes that the camera simply holds in suspense. No photograph can give the impression of action that a good drawing can. There are aspects of the photograph, however, that appeal with special force to all of us. First of all is the actuality of the picture taken with the camera. It gives us an exact transcript of the scene in all its details. It presents the real thing just as it appeared, without the intervention of the artist's selective judgment and individuality. The photograph, I think, carries a stronger impression of fact to the eye and mind than the drawing, and fact is what the mind demands when considering those happenings that belong to the daily record of events. There is another strong point in favor of the photograph in the field, and that is the rapidity with which its records are made.

A photograph can be taken under conditions and in a fraction of time that would make a sketch an utter impossibility. Captain Wise made an exposure while charging up San Juan Hill, and many of the newspaper correspondents secured records of battle scenes while under fire. On the tombs and monuments of old Egypt are carved long processions of figures symbolizing the battles and victories of various monarchs. Picture-writing is no new art, but it has remained for us moderns to make the great god Helios do the work that was anciently done by manual labor. The very reason that separates photography from art in its true sense gives it unique value for the purpose of recording the facts of war and peace alike.



All copy for May issue must be in our hands not later than April 15th.

ANDERSON'S NEW STUDIO.

ONE of the latest of New York City photographers to follow the northward trend of business is D. H. Anderson, who has lately opened a new and beautifully appointed studio on the eighth and ninth floors of a new and imposing building at Nos. 258 and 260 Fifth avenue, between 28th and 29th streets. The entrance to the building is spacious and attractive, Mr. Anderson's occupancy being announced by two large and tastefully unique wrought iron frames, in which are displayed, under glass, specimens of work produced in the studio. A commodious elevator takes the visitor to the reception-room door, and on entering the studio the effect is one of peculiar harmony and richness of color and decoration.

The office appointment is hardly visible, consisting only of a very



short counter across one corner, behind which are the only suggestions of a business office to be seen in the rooms.

There is, throughout, a noticeable absence of display in any form, and the prevailing colors, a dark olive green and a sombre red, used in decorations, rugs, tapestries and upholstery, carry an impression of richness and quiet elegance that at once puts the visitor at ease with his surroundings and is extremely restful in its influence.

The reception room occupies the entire front of the building facing Fifth avenue, while off it, facing on 29th street, is a room separated by portières, in which is a collection of plain photography, including portraits of the highest class in Aristo, Platinum and Carbon. In another room, which is lighted wholly by electricity and arranged with reflectors for each picture, is an exhibition of pastels, while beyond it is the water-color room, with special lighting and reflecting appliances.

The historical composition room, in which there are the original compositions of some of Mr. Anderson's well-known groups, such as "Astor's Battery," "Squadron 'A,'" "The House of Episcopal Bishops,"



OFFICE AND RECEPTION ROOM.



RECEPTION ROOM.

"The Hierarchy of the Catholic Church in America," "The Arch-Bishops of the Diocese of New York and Five Hundred Priests," and others, is next it, and beyond is the artists' room, well lighted from the north, and decorated in green.

A handsome marble stairway, with bronze railing and balustrade, leads to the retiring-rooms and operating-room, which, together with the darkroom, printing-room, dry-plate room and negative storage-



OPERATING-ROOM.

room, are fitted with the best and most modern appliances in use to-day.

The view to be obtained from the windows and roof is very extensive, and the light and air are of the quality which is only to be found above the lower buildings of the city. A roof garden, which is now in process of preparation, will be a feature of the studio, and from it, Fifth avenue can be seen in its entire length, from Washington Square to Central Park. These attractions of themselves should make Mr. Anderson's studio popular in the summer season.

It seems not to be generally known that a proof may safely be made from a negative immediately after fixing and washing and before drying. This knowledge is at times very important. A sheet of bromide paper should be placed in a tray of clean water (in the darkroom) and the washed negative be placed under it in the tray, film side of paper and of negative in contact. Remove from the tray and squeegee the paper lightly to insure perfect contact. Expose before gas or lamp-light, remove the paper from the negative under water and develop as any other bromide print.

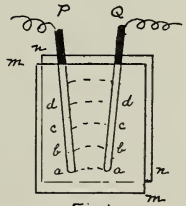
PHOTOGRAPHY OF LIGHTNING AND WIRELESS TELEGRAPHY.

BY REV. F. C. LAMBERT.

FROM quite the early days in the history of photography the subject of lightning has always been a fascinating one. Mr. Glew, by his recent demonstration-lecture before the Royal Photographic Society (London), on February 21st, has added very considerably to the current knowledge on the subject. The following notes may be taken as a brief résumé of some of the many points touched upon by him.

1. We must remember that there are considerable differences between the conditions of natural lightning and electric sparks produced in the laboratory, *e. g.*, temperature, pressure, potential, etc. Sparks from a coil result from sudden rise of potential. Lightning comes from gradual increase of potential, until it reaches the discharging point. This is probably brought about by the coalescence of small particles of water into large drops. Suppose two small spheres of water, each equal, charged with electricity. If, now, these two spheres come together and form one larger sphere, its volume is equal to the sum of the two smaller spheres, and the electric charges formerly distributed over the surface of the two separate spheres are now the same in total quantity, but are distributed over the one larger sphere. But its surface is less than that of the two separate surfaces of the original smaller spheres. Therefore, the actual electric charge is condensed, as it were, and a consequent increase of electric density or potential results. In this way we can form an intelligible idea of the way thunder storms originate.

2. When a series of sparks pass between two charged bodies their path through the atmosphere is not identical. The first spark in passing causes a rise of temperature. This track of warm and expanded air ascends. The next spark follows this path of warmed air as that of least resistance, which again raises its temperature, causing displacement. The third spark repeats this, and so on. Mr. Glew demonstrated this by means of a very neat and simple experiment. Two stout sheets of glass *mm* and *nn* (Fig. 1), are put with their faces parallel. But, between them are inserted two thin rods of metal, *PQ*, nearly, but not quite parallel. Their upper ends, *PQ*, are connected with the terminals of a coil or other source of electricity. Their lower ends, *a a*, are free, and somewhat nearer than their upper ends. On causing a current to flow, a spark jumps across *a a*, their nearest points. This warms a path of air, which ascends. So that if a second spark now follows, it jumps from *b* to *b*, for the path of warm air has by this time ascended to this position. Succeeding sparks take the tracks *c c*, *d d*, and so on, indicating the path of least resistance, expanded warm air as it ascends. The passage of sparks through air is accompanied by the formation of nitrous oxide, which shows that direct union of the nitrogen and oxygen of the atmosphere has taken place.



3. The duration of time occupied by a lightning flash is a point upon which there seems some misconception. Some early estimates were made by observing the displacement of a disc rotating at known speed. In this way estimates of $\frac{1}{100000}$ of a second and less were arrived at. These estimates are probably very extravagantly high. There are at least two photographic methods open to us. One is that of using a sensitive plate revolving at known speed in a plane perpendicular to the optic axis of the lens. The other—followed by the lecturer—was that of attaching a small lens to a vibrating rod similar to that of the hammer of an electric bell. This may be set vibrating at a known uniform rate. In this way a flash of lightning was photographed. This revealed the fact that the apparently single flash consisted of three separate and distinct electric discharges. The entire time of the discharge occupied about $\frac{1}{10}$ or $\frac{1}{20}$ part of a second, and the interval between two of the components was about half this time, say $\frac{1}{20}$ to $\frac{1}{40}$ second. Numerous observers have found that one visible flash is recorded on the plate, as in reality, two or often three separate flashes quickly following.

4. When a lightning discharge takes place Hertz waves are generated and travel through the ether. A suitable instrument will detect

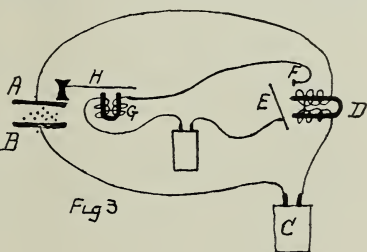
and record these Hertz waves. In this way one may contrive what the lecturer calls a Hertzian sentinel which gives warning that electric discharges are taking place and that a storm is approaching. The general oscillatory or vibratory character of these Hertz waves may be mentally pictured by means of the accompanying diagram, Fig. 2. In *A* we have a sphere (dark) of metal; around which we may suppose a charge of electricity to be uniformly distributed, as represented by the dotted zone. If now from any cause this charge is unevenly distributed, *B*—let us suppose it accumulated chiefly towards *p* and very little remaining at the opposite pole *q* and that the concentration at *p* is enough to bring about a discharge in that region. Then in consequence there will be a reaction, *C*, or back rush effect, and what remains will swing back towards *q*, leaving but a minimum at *p*, the recent point of maximum charge. But as this uneven distribution cannot be so maintained, there will be again a back rush to the state of affairs as in *B*, and again to *C*, and so on. The lecturer compared the phenomenon to that of tilting up a dish containing liquid when the waves of fluid swing to and fro in the usual and familiar way.

Fig 2

5. *The coherer-detector.*—This is an instrument for detecting and utilizing these Hertz ether waves. In Fig. 3 we show the essential constitution of the instrument. Two circular metal plates, *A* and *B*, are arranged with their faces parallel, and separated only by a small space. The space between them is partly filled with small particles of metal, *e. g.*, filings, quite clean and free from grease. The plates *A* and *B* are connected with the poles of a battery *C*, and in the circuit is an electro-magnet at *D*. Now suppose *A* and *B* to become charged

with opposite electricities—a difference of potential. There would be a tendency of the current to jump across the gap between them were it not partly filled with conducting particles. The current will, however, cause them to cohere and bridge over the gap, and in that way the previously open circuit is closed and current flows. This throws into action the electro-magnet *D*. This in turn attracts the armature *E*. This, in turn, closes the auxiliary inner previously open circuit *E, G, F*, by bringing *E* in contact with *F*. This, in turn, brings into action a second electro-magnet at *G*, and this causing the hammer *H* to vibrate, which taps the disc *A*, so causing the cohering (conducting) particles to fall apart, so that the outer circuit is again thrown open. We are thus again *in statu quo ante*, and ready for a second message.

6. *Application of apparatus to photography of lightning*.—As already said, an ordinary lightning flash consists of more than one electric discharge. Mr. Glew conceived and has successfully carried out the idea of utilizing the Hertz wave generated by the first component, to enable him to catch the succeeding components of the flash. We can easily imagine (Fig. 3) that the armature *E* connected to a shutter-release, so that when the coherer closes the outer circuit and *D* is brought into action, the shutter is set going. Obviously every care must be given to see that the moving parts are delicately adjusted, and that the time taken by the opening of the shutter shall be very brief. Mr. Glew has already brought his instrument to such delicacy of adjustment that he can bring down the shutter speed to $\frac{1}{15}$ of a second, an interval quite quick enough for the purpose.



7. *Photography of lightning during the day time*.—Hitherto all one could do was to point the camera to a likely part, draw the slide, and wait till a flash should come within the field of view. But obviously a very large proportion of plates are hopelessly fogged by this waiting interval. The apparatus just described partly meets this difficulty, the first component opening and closing the shutter in time to secure the remaining components. The lecturer also makes other suggestions, whereby he is not without hope that the entire flash may yet be captured.

He points out that Hertz waves—being ether waves—must travel with the velocity of light in air, but that the lightning has to travel through the glass of the lens. Now, the speed through glass is only two-thirds of that through air. Therefore, it may one day be possible to make the wave coming through ether and air only arrive in time to open a shutter quick enough to let the glass-retarded waves through. He also suggests the application of Faraday's observation that when an electro-magnetic stress alters the place of polarization of light, if then we place a cylindrical tube containing carbon disulphide between a pair of crossed Nicol prisms, no light will pass; but by surrounding the cylinder with a coil in circuit and passing a current, the place of polarization is caused to rotate, and some light passes.

8. The lecturer also refers to the important difference in the result of light falling on the plate before or after a spark. Half a plate was exposed to sky fog for a time, then a series of spark images passed from end to end, then the other half exposed for some time to sky fog. The result is striking and puzzling, viz., sky fog after the passage of the spark gives photographic reversal of the spark image, but the same amount of sky fog falling on the plate before the spark image does not give reversal. (Results also confirmed by Mr. Clayden.)

9. For the photography of lightning at night he recommends a lens of large aperture, and a quick, multiple-coated plate.



GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

RESTORATION of Yellow Prints.—The prints are put into the following bath:

Concentrated solution of bichloride of mercury in nitric acid.....	8 cubic centimeters.
Water.....	1,000 “ “

When the picture has assumed a purple-violet tone in this solution, immerse in the following solution:

Chloride of gold and potassium.....	1 gram.
Water.....	1,000 “

Another method is the following:

The picture is bleached completely in the darkroom in the following bath:

Bromide of potassium.....	3 grams.
Sulphate of copper.....	6 “
Water.....	100 “

The print is then washed, dried and exposed to light for a moment. It is then developed with oxalate of iron or amidol. It is recommended that the developer be acidified with a little tartaric or citric acid. Fix and wash as usual.

How to Work Silver Residues.—Silver solutions are at once reduced by alkalic formaldehyde solution. Unsoluble silver chloride and bromide, as well as silver rhodanite are transformed in the cold into elementary silver. The secretion takes place by simply mixing these residues with a concentrated soda hydroxide solution and formaldehyde solution. If there are, for instance, 50 grams silver chloride or bromide, this is stirred with a solution of about 30 grams soda hydroxide and 15 grams of a 40 per cent. formaldehyde solution. The reduction commences at once and in a few minutes the silver will precipitate. For silver iodide, cooking is necessary. This process is patented in Germany.

REGARDING THE THEORY OF PRINTING-OUT.

BY R. ED. LIESEGANG.

CHLORIDE of silver paper intended for printing-out always contains, besides the chloride of silver, a considerably large quantity of free nitrate of silver. The latter is necessary, because pure chloride of silver would not color sufficiently dark. The nitrate of silver is considered as a chemical sensitizer. It is to take up the chloride which becomes liberated from the chloride of silver by exposure.

If this reaction actually takes place, the film will contain less nitrate of silver at the exposed parts than at those not exposed. I have observed a number of phenomena, which point to the fact that this is actually the case, and, as several things can be explained by it, I think it is worth while to make mention of them.

One of them I pointed out some time ago. Suppose I flow a glass plate with a mixture of gelatine solution and gallic acid. After coagulation of the film I place upon the same a chloride of silver gelatine picture not printed-out. The latter gradually develops to its full strength. If the picture is then taken up, a negative print of the same picture will be seen upon the gallic acid-gelatine film. At the unexposed and very little exposed parts the nitrate of silver has left the picture and has penetrated the film mentioned, to be reduced there by the gallic acid. An explanation for this appearance I did not give at that time. In connection with the following it is very probable that under the richly exposed parts of the picture no diffusion of nitrate of silver had taken place, for the reason that these parts contained no more, or very little, nitrate of silver.

An analogous appearance takes place if a printed-out chloride of silver picture is placed upon a gelatine film containing chloride of soda. A negative picture, consisting of chloride of silver, will then form.

But it is not necessary to work with gelatine, to be able to observe such differences in the diffusion at the exposed and unexposed parts. If a printed-out chloride of silver gelatine plate is placed into a platinum toning bath containing a little chloride of soda, the film will be covered at the little or not exposed parts with a coating of white chloride of silver. The dark parts are not affected. This newly-formed chloride of silver is located outside of the gelatine film, and can easily be removed by wiping it off. If the theory is accepted as correct, that the quantity of free nitrate of silver in the film becomes weaker by exposure, these differences in diffusion are easily explained after the principles in my publication, *Chemical Reactions and Gelatines*. The nitrate of silver can leave the film and enter the liquid only then, when its solution is of a greater molecular value (than that of the chloride salt). Analogous coverings of the unexposed parts of a chloride of silver picture can be observed, if it had not been sufficiently washed before putting it into a gold bath. Such peculiar diffusion appearances will be met with without even studying the behavior of the plates and papers in the baths. I found a number of old prints upon albumen paper, which had been kept in the dark, unfixed for

several years. Such papers, if kept for some time, will, of course, discolor on the back and assume a pretty dark-brown color. This discoloration comes from a reaction between the free nitrate of silver and the organic substance of the paper. On the prints in question a discoloration on the reversed side had not taken place at those parts which on the picture side were dark. The light parts of the picture side corresponded, on the contrary, with dark-colored parts on the reversed side. The reversed side showed thus a strong negative. By the above theory the phenomenon is easily explained. The nitrate of silver had sunk into the paper support. Such being missing at the stronger exposed parts of the film, the discoloration was left out of the corresponding parts of the reversed side.

Such negative pictures upon the reversed side, under particular circumstances and for the same reason, may also originate in the physical development of only partly and weakly printed chloride of silver pictures. I have observed them, when accidentally a picture had been in the tray without being moved for quite a while, and the tray contained only so much developer that the paper was just moistened. Under normal conditions, this appearance will, of course, never take place.

As an evidence, that the quantity of nitrate of silver can become reduced at the highly exposed parts, is the presence of solarization in the physical development. It is not the gallic acid that develops here, but the originating metallic silver, and it is difficult to comprehend how intensification could stay out here. But I have observed that highly exposed parts, for instance, the edges of a paper which had been partly printed under a dense negative, would not continue to blacken. This might be considered a beginning of solarization, as parts which had received much less light would blacken considerably stronger under the influence of the developer. Something similar is also possible in the wet collodion process.

An experiment may be mentioned here, to make use of this distribution of nitrate of silver in the printed-out chloride of silver picture. If such a print is coated with albumen, this will be coagulated at the unexposed parts by the nitrate of silver which is there. At the highly exposed parts, however, it is not coagulated. The formation of an albumen relief should, therefore, be expected.

Translated by

HENRY DIETRICH.



It behooves all who intend to exhibit at the Convention in July to be hard at work on their exhibits by this time; many we know have already started, and have made excellent progress. It is a mistaken idea to think that an exhibit can be gotten together at the last moment, from the regular work of the preceding months. One cannot in this way do himself justice, but should devote thought, time and labor to the production of his ideals; only in this way will success be possible. Remember that the prize-winners will be found among those who have worked hard for the goal. The time between now and the Convention is rapidly shortening. This work should not be put off.

AMMONIA PERSULPHATE, ITS PROPERTIES AND MANIFOLD APPLICATIONS IN PHOTOGRAPHY.

By G. PIZZIGHELLI.

WITH reference to the publications of Lumière Brothers & Seyewetz about the use of ammonia persulphate as reducer in negatives, Professor R. Namias has made a number of tests of the properties of this substance, with the following results :

1. The ammonia persulphate has already been known for some years under the name of anthion, and recommended as destroyer of fixing soda for shortening the washing process, as it changes the thio-sulphate into tetrionate, which does not injure the picture. It found, however, little practical value in its application for this purpose, as it attacked the picture, like most eliminators of fixing soda. The best means of eliminating the fixing soda is always running water. The hydrogen hyperoxide is an exception, and it was, therefore, recommended repeatedly by the writer for those cases in which a shortening of the washing process is required.

2. The application of ammonia thiosulphate for the reduction of negatives in that way, that the lights are principally reduced, while the half-tones and details in the shadows remain more or less unchanged, discovered by Lumière and Seyewetz, is of the greatest advantage. No reducer was known until its discovery, which made it possible to bring harmony in too hard negatives by reduction. The well-known method of changing the silver precipitate of the negative by treatment with chloride of copper or by dichromate solution mixed with muriatic acid, into chloride of silver, and then to develop only partly, produces the desired result in a partial degree only.

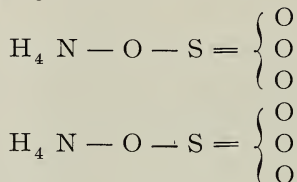
3. The method of working, as given by the discoverers, is, according to experiments of the writer, the best. The washed negative is immersed in a 5 per cent. solution of ammonia persulphate, and after five to ten minutes' duration of action a more or less equalization of contrasts is obtained, the solution acting at first upon the lights and later upon the half-tones and shadow details. A consequent washing completes the operation ; but if a continuous action of the reducer is not wanted, the negative should, after result obtained and before washing, be put into a 10 per cent. solution of sulphite of soda, which transforms the persulphate into sulphate. The latter does not act further upon the silver picture.

4. With the theory of the process, as mentioned by Lumière & Seyewetz, the writer cannot agree, and before entering upon this point, some remarks about the ammonia persulphate and its properties will be necessary.

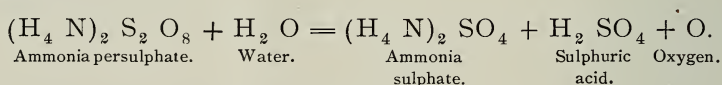
The ammonia persulphate is obtained by neutralization of the hypo sulphuric acid, which is a product obtained from sulphuric acid by action of the electric current, or directly by electrolysis, from a saturated solution of ammonia sulphate.

A white crystalline powder forms, which is easily soluble in water (1 part of the salt in 2 parts of water). During solution it hisses, prob-

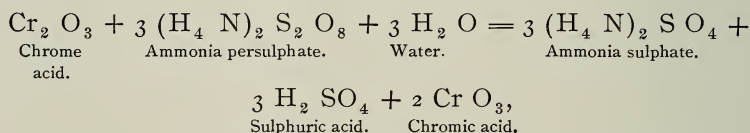
ably in consequence of liberation from some oxygen. Its chemical formula is ordinarily given with $H_4 N SO_4$. To be exact it should be written: $(H_4 N)_2 S_2 O_8$, or,



The supersulphuric acid and the persulphates possess an energetic power of oxidation; in presence of a substance which will unite with oxygen, they decompose water, bind the hydrogen under transformation into sulphuric acid or sulphates, and liberate the oxygen. Their oxidizing action is therefore not direct, but indirect, and may be expressed as follows:

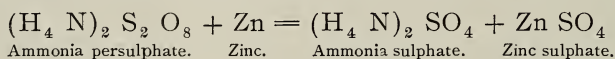


The ferro salts are changed by ammonia persulphate into ferri salts, the soda thiosulphate is changed into tetrionate, and the chrome salts into chromic acid or chromates. This latter reaction, discovered by the writer, which may be of some importance for many photographic processes is expressed as follows:

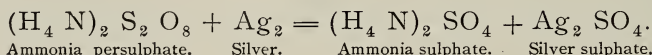


that is, one molecule of chromic acid, chrome oxide or chrome salts requires three molecules of ammonia persulphate to change into chromic acid. The reaction can easily be verified, if a 10 per cent. chrome alum solution is mixed richly with ammonia persulphate. After several hours the solution becomes completely yellow, and the chromic acid can be changed to a chromate or dichromate by addition of ammonia. A small addition of sulphuric acid accelerates the reaction. In chemical analysis this might be used to determine the chrome.

5. Besides its energetic oxidizing action, the ammonia persulphate possesses also the interesting property of dissolving some metals (zinc, aluminium, iron). The apparently peculiar property of a neutral salt is explained by the fact that by substitution of an atom of metal in the molecule of the persulphate, a sulphate will originate. In zinc, for instance, the reaction takes place after the equation formula,



in silver:



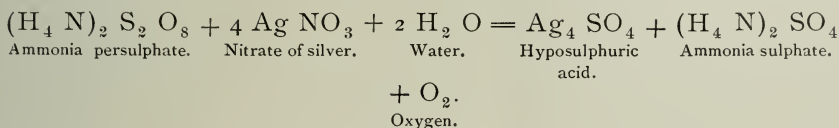
This reaction explains the application of ammonia persulphate as reducer of the negative, which consists of silver.

6. Another peculiar property, discovered by Lumière, is the capacity of the ammonia persulphate, to have a reducing action upon the silver salts.

Lumière and Seyewetz are of the opinion, that the gray substance, which forms by action of a solution of ammonia persulphate upon a solution of nitrate of silver, is metallic silver, and try on this basis to explain why the ammonia persulphate acts on the photographic film, not from the outside towards the inside, but in a reversed way.

Namias tested this appearance and found, that a reducing action takes place, but that it never reaches to the reduction of metallic silver, but only to a dark-gray compound, which might be accepted as a more or less basic hyposulphate of silver.

The formation of this compound is accomplished by oxygen development, which proceeds after the equation formula:



It is not impossible, that a more basic, hyposulphuric compound will form, but never metallic silver. The grayish black precipitate dissolves completely and quickly in the fixing soda, as well as in sulphite of soda, without any residue, which evidently would not be the case, if metallic silver was present. Boiled in water, the compound throws off sulphur and changes to more basic hyposulphate of silver, but still remains soluble in fixing soda. The latter fact excludes the hypothesis completely, that a mixture of metallic silver and silver persulphate forms, whereby the metallic silver, in consequence of action of the persulphate, becomes soluble in the fixing soda.

Translated by

HENRY DIETRICH.

ON BUSINESS, BY A BEGINNER.*

BY FRANK M. SUTCLIFFE.

“ Will the love that you're so rich in
 Make a fire in the kitchen,
 Or the little god of love turn the spit, spit, spit ?”

THIS is a question every one who has fallen in love with photography should ask himself before he tries to make a living, and, perhaps, marry, and bring up a family on photography.

There is, as Lord Crawford said in his widely quoted recent speech to the Royal Photographic Society, a danger of overlooking the bread and butter side of photography, and a serious danger it is. The love of art and the turning of the spit are so diametrically opposed to each other that the training required for the one unfits the worker for practicing the other. The practical photographer should be careful, therefore, not to let his love of art take up too much of his time and thought, to the neglect of the far more important subject which Lord Crawford tells us not to forget.

* *Photography*, February 16, 1899.

We live in a commercial age, where everything is done for what it will fetch in the market. The questioner might say, Here, then, is a powerful reason why the photographer should cultivate his taste that he may get the best prices. The answer is that in other ages, or in other countries, a higher price might have been got for thoughtful work, but in this commercial age and this land of shopkeepers the buyers have not always the power to see what is good. They have been so busy all their lives looking after their shops, their workpeople, or their horses, that their higher senses are undeveloped.

Many a young photographer has devoted years to the study of art, only to find that he has made a mistake in the choice of a profession. He no doubt follows the advice of P. G. Hamerton, "to stick to it to the end;" but it is often too late to turn over a new leaf, and impossible to tear himself away from following art for the love of it, though he knows that it will do his pocket no good.

Then, when the photographer endeavors to turn his back on art, and woo the stranger, business, he finds that success in business is achieved in quite a different way. Much, however, he may learn when stern necessity makes him attend to business. Things which appeared to him of no moment turn out to be of vital importance.

First and foremost, promptitude demands attention. It is of the utmost importance to the professional photographer that, having once taken a sitter, the proofs should be sent in, without a moment's delay, while the sitter's interest is fresh. Some of the most successful photographers, financially, put down their success to having made it a rule to insist on the proofs being sent out the day following the sitting. The sooner the proofs are returned, the greater the chances of a good order, for, if sitters are allowed to keep their proofs too long, first one friend and then another will suggest an improvement, till a resitting is wanted. A polite request that the proofs be "returned with the order at the sitter's earliest possible convenience, owing to increasing pressure of business," will help to get the orders in quickly.

After having got an order, let it be finished at once. Here the fastidious one who has been making his faculties keener and sharper will find it hard, for, if he examines, as he ought to do, every print sent out, he will find many to be imperfect, and his wish to be a good business man, by being prompt, will quarrel with his aim at perfection, and either the wish or the aim will have to give way.

Then he may read in his "Book of Maxims for Business Men" that he should not let a customer go till he has got his last halfpenny from him, and to this end sets to work and tries to get an order for an enlargement. Now, if there is one thing which one who has studied good art abominates, it is the usual photographic portrait enlargement. It is generally bad throughout. It is not what it pretends to be, a likeness, for this has been removed by retouching, a thing which, as we shall see, invariably goes with financial success. This retouching shows so badly when the enlargement is made that it has to be worked up; and no matter how skillfully this is done, the finished picture is unlike anything in heaven or earth, excepting, maybe, a Christmas number, or a fashion plate—things we certainly hope to be spared in the world to come. However, "business is business," and the pigs which pay the rent of many a photographic establishment are the enlargements, unclean as they may be to the fastidious.

Then another maxim in the business book is, "Advertising is the mainspring of business." It is impossible to teach a successful business photographer anything he does not know about advertising. He rejoices ten times a day that he is not, as the doctors are, prohibited from advertising. He does not hesitate to write to complete strangers to him without an introduction, and the excuses he makes for his rudeness are without end. He is making a collection of the local dog fanciers, or of the children fed on Mellin's food, or he is photographing every animal in the country fed on chopped hay. But it would be as vain to attempt to dredge the middle of the Atlantic as to get to the bottom of the ways of the business photographer. His is a story without an end.

CHEMICAL SHORTHAND.*

By C. F. TOWNSEND, F. C. S.

CHEMICAL symbols must seem very incomprehensible to the uninitiated, but in reality they form a convenient and simple kind of shorthand—much simpler than the ordinary variety—from which any one with a knowledge of the code can decipher at a glance what would require a page or two to express in writing. Silver, for instance, which plays such an important part in photography, is designated in the chemist's shorthand by the symbol Ag, and chlorine, another element, by the symbol Cl, and silver chloride has the formula AgCl. In a similar manner bromine has the symbol Br, and silver bromide the formula AgBr. It is a convenience in itself to write AgBr instead of having to write silver bromide, and the convenience is very much greater when the formula of a complicated body is used to designate it.

This is not all, for to the chemist the formula AgBr means a great deal more than merely an abbreviation of silver bromide. Ag means not only silver, but a definite weight of silver, and Br means a definite weight of bromine. After many years of experiment and thought chemists came to the conclusion that if you took a piece of silver, for instance, and powdered it up small, and then went on splitting it up into smaller and smaller pieces far more minute than human eyes could distinguish, you would come at last to a stage at which the silver could not be split up any more. The particles at this stage they styled atoms. As they cannot be divided any further they must of necessity combine as a whole with other atoms. That is to say, you can never have half an atom entering into a chemical combination, but it must always be one atom combining with one, two, three, four, or whatever number it may be, of other atoms.

It is supposed that all these atoms, whether of silver, iron, chlorine, or any other element, occupy the same space, although their weights are not the same. These atoms are much too tiny to see, much less to weigh separately, but it is found that a number of silver atoms weigh one hundred and eight times as much as the same number of hydrogen atoms, the hydrogen atom being taken as the standard, hydrogen being the lightest substance known. Chlorine is thirty-five and a half times as heavy as hydrogen, and bromine eighty times as heavy as hydrogen.

Now you will see at once how useful the chemical shorthand is, for directly you see AgBr written you will know that it means not only silver bromide, but that silver bromide consists of one atom or particle of silver to each one of bromine. Besides this you will know that 108 parts by weight of silver (grains or grams) combine with 80 parts (grains or grams) of bromine, so that, to put it the other way, 188 grains of silver bromide contain 108 grains of silver and 80 grains of bromine. Similarly silver chloride, AgCl, means 108 parts by weight of silver combined with 35½ parts of chlorine.

Supposing you wish to know how much silver bromide you must use in an emulsion to get the same quantity of silver as with silver chloride, it is only necessary to look at the formulas. AgBr weighs 188, and contains the same weight of silver as AgCl, weighing 143½; so that for every 143½ parts of silver chloride you must employ 188 parts of silver bromide to get the same quantity of silver. Silver iodide has the formula AgI, and as I stands for 127 parts of iodine, 235 parts (127 added to 108) of silver iodide contain the same quantity of silver as 188 parts of bromide or 143½ of chloride.

In the same way the formula of silver nitrate is AgNO₃, which signifies that silver nitrate is composed of one particle of silver, one of nitrogen, and three of oxygen, this being an example of a more complicated substance. The nitrogen symbol stands for a weight of 14, and oxygen 16, so that 108, 14, and 3 sixteens added together will give you the total or molecular weight of silver nitrate, namely, 170. From this it is seen that 170 parts of silver nitrate contain 108 parts of silver.

A slight effort of memory will suffice to carry in your mind the symbols and atomic weights of the more common elements, and when this has been accomplished

the inspection of a formula will tell you immediately the composition of a substance and much about it. K_2PtCl_6 (potassium chloroplatinite) tells you that this substance is a double chloride of potassium and platinum. Na_3SbS_4 (Schlippe's salt) is evidently a sulphide of sodium (Na) and antimony (Sb). Pyrocatechin hydroquinone and resorcin all have the same formula, so that the difference between them must be in the way that the atoms are arranged.

In this way chemical shorthand is used to convey information in the easiest and simplest way, and only a very slight knowledge of chemistry is required to decipher its hieroglyphs.

ACCIDENTS.

AN experienced workman can be detected at once by the way he handles his tools, and by the instinctive attention to apparently insignificant detail. A properly trained chemist rarely breaks anything, in spite of the extreme fragility of most of the vessels he handles, and the hints that follow, although often apparently trivial, may serve to avert many mishaps.

First, in regard to the handling of a bottle. Always take hold of it as close to the bottom as possible. This allows of perfect control in pouring out the contents into a graduated measure, the weight being properly balanced in the hand. If the bottle be inconveniently large to be grasped by the hand, stand the bottle on the table, hold it by the neck and tilt it over until the contents begin to flow out into the receptacle. When stoppered bottles are washed up, always take care to place the stopper alongside its own particular bottle when it is draining. Nothing is more irritating than to get stoppers into bottles that do not belong to them. When the bottles differ much in size the mistake is soon discovered, but when a number of similar bottles are being washed at the same time, it is simply maddening to get the stoppers mixed.

A bottle should never be filled quite full. If a cork or stopper is pushed into a bottle which is full, the bottom or the sides will probably give way. When filling a bottle it is always advisable to employ a funnel, and to put a piece of paper by the side of the funnel, so as to leave a space in the neck of the bottle through which the air can escape as the liquid goes in. Otherwise the liquid may refuse to enter and will overflow at the top of the funnel.

Never keep alkalies in a stoppered bottle. Owing to the action of the alkali on the glass the stopper will probably become permanently fixed, and the neck of the bottle will be broken off in trying to remove it. Even in bottles which do not contain alkalies the stoppers occasionally become fixed. In this case, the best method of procedure is to take hold of the stopper (not the bottle) with one hand and rap the stopper with the other, using some convenient piece of wood as a hammer. The sharp contact of metal and glass generally leads to a catastrophe. It is always better to hit the stopper on the edge and not on the flat side. If this treatment does not secure results, the neck of the bottle should be warmed judiciously in a gas flame. This treatment will expand the neck, whilst the stopper remains cold and becomes loosened. It is not safe to put hot liquids into the ordinary bottle.

In corked bottles the cork should be just too large for the neck of

the bottle, in the first instance, and should require to be squeezed before it will go in. If a cork has been pushed right into a bottle, it can be extracted quite easily by passing a loop of string round it and pulling it out. Trying to get it out by spearing it with a knife is a failure.

In making up solutions of crystals, such as sulphite of soda, the crystals should not be placed at the bottom of a vessel which is afterwards filled with cold or tepid water. The best way is to place the crystals in a funnel, and pour hot water through them. By this means they will soon be dissolved. If no funnel is to be had, suspend the crystals in a bag of muslin, or some such material, in hot water. A mistake that leads to particularly fatal results is to place the crystals in a glass vessel or porcelain basin with cold water, and apply heat at the bottom. This is a perfectly certain way of removing the bottom of the vessel and precipitating the crystals and water on the table. Crystals take up a large amount of heat in the act of dissolving, and, if placed in a vessel, form a cold layer at the bottom, so that if heat is applied the vessel cracks, being cold on one side and overheated on the other.

A glass stirring rod is very useful when making up solutions. Unless, however, the business end is protected by a little piece of rubber tube, about an inch long, drawn over it, the rod will do considerable execution in knocking holes in glass vessels.

The glass flasks and beakers, as purchased at an ordinary chemical dealer's, will stand a direct flame quite well, so long as the flame does not play upon any part unprotected by liquid inside. If a gas burner of the ordinary non-luminous variety is being used, it is often convenient, although not essential, to cover it with a piece of wire gauze. The old dodge of standing the flask or other vessel in a sand-bath, made of a shallow iron dish filled with sand, is much too slow.

Distilled water should be used for making up solutions of oxalates and of silver nitrate or lead nitrate. Boiled water should be employed for developers. Vessels that have contained silver nitrate should be rinsed with distilled water.

In diluting sulphuric acid, always add the acid to the water, and never *vice versa*. It is unsafe to dilute sulphuric acid in a graduated measure of the ordinary description. The heat will probably cause the bottom to drop off. Caustic soda, when dissolved in water, gets very hot, and similar accidents might happen in this case.

In spite of all care, acids will get upset occasionally over the table or the operator's clothes. In the latter case the application of strong ammonia is the best remedy. A wet cloth is the best means of removing spilt acid from a table. When using sulphuric acid, whether strong or dilute, care should be taken not to lay the stopper down on anything except glass or porcelain, as the acid rapidly chars wood, or paper, or leather. Even dilute acid gradually produces this effect.

One of the most frequent causes of mishaps is the neglect to label a bottle, or the label becoming unreadable. It does not take long to label a bottle, and the label can be rendered comparatively permanent by melting up a candle end, and giving the label a coat of melted paraffin.

Enameled iron dishes not infrequently have weak places in them. If liquids are left standing in contact with the enamel for two or three days, rust spots develop where the enamel is thin, the enamel commences to flake off, and the dish is done for.

Methodical working is the only satisfactory way of averting mishaps in the darkroom. The use of burettes fixed to clamps in the wall, and fed from stock bottles on a shelf above, as previously explained in *The Photogram* (November, 1896, page 271), will be found to conduce to comfort as well as accuracy in the darkroom; there are so few things left to knock over. In a permanent darkroom it is a good thing to paint the shelves white, so that the shelves themselves, and the bottles upon them, can be seen readily. It is the greatest mistake at any time to work with a light that does not enable you to see what you are doing. A reasonable light can be used with perfect safety by a reasonable man.

The tap in the darkroom should be protected with a piece of india-rubber tubing. This prevents the film being damaged by contact with the sharp edge of the tap. The tube can be a foot long with advantage, and will be found convenient for many purposes.—By C. F. TOWNSEND, F. C. S., in *The Photogram*, February, 1899.

SODA VERSUS POTASH.

BY MILTON B. PUNNETT.

SINCE the introduction of the alkaline carbonates to replace ammonia in the pyro developer, discussions have often occurred regarding the respective virtues of each. The newer developing agents calling almost exclusively for them, has, if anything, intensified the dispute.

The advantages claimed for potash are, better blacks in the positive process and more speed (greater detail) in the negative process. Within the last few years the writer has made numerous tests of highly recommended formulas containing these alkalies, and has failed to find any appreciable difference in their working, either in the negative or in the positive process.

Potash has the disadvantages of being more costly and deliquescent. A photographer substituting potash for soda crystals in a formula would be apt to take an equal weight instead of an equivalent amount, and thus obtaining a more alkaline solution, he would obtain an apparent, not a real, increase in speed of the plate, due to the greater rapidity in appearance of the detail.

The following abstract from a table published by W. B. Bolton in the *British Journal of Photography* which he claims is based upon the developing power and not the chemical equivalent, may be useful.

Anhydrous Soda.	Crystallized Soda.	Anhydrous Potash.	Crystallized Potash.
1 000	2.698	1.301	1.641
.370	1.000	.482	.608
.768	2.072	1.000	1.261
.609	1.644	.793	1.000

The speed determinations referred to above were made with a sensitometer, and any difference would have been easily noticed.

FLORAL PHOTOGRAPHY.

MANY photographers are finding in flower photography a very alluring field of experiment and study, and are producing results that are full of beauty and feeling. The following article, by Osborn Thornbery, in a late issue of the *Amateur Photographer*, will be read with interest and profit by those who are working on these lines.—[EDITORS.]

"Flowers form one of the most fascinating branches of study it is possible to make by means of the camera. They may be photographed at home, either by artificial or daylight, and with a little artistic skill many beautiful effects may be obtained. This is much better than having to trudge miles in a boiling sun or on a bitterly cold day to obtain a pretty view. Large flowers, such as chrysanthemums, marguerites, lilies, roses, tulips, and hyacinths, are the best to photograph, as small ones, like violets, cannot be arranged so easily. Light-colored flowers should be used, as the dark varieties do not photograph well. A dark background, such as a black velvet one, is the best to use, so that the flowers will stand out in relief from it. A background with a design should be avoided, as it will interfere with the arrangement of the flowers. The simpler the background, the more effective will be the result. It should be stretched on a frame to remove all creases, as they will show, and should be fixed up about a foot from the place where the flowers are to stand. If the flowers are to be photographed in a vase, one with a simple design should be chosen, as a gaudy design removes the interest in the flowers. A semi-opaque vase without a design should, if possible, be used. It will then show the stems of the flowers, and add to their picturesqueness. Great care and artistic judgment should be used in arranging the flowers, and they should not be crowded together, or deep shadows will be thrown, thus making a harsh and spotty picture. They must be arranged distinctly, taking care not to have them too rigid. If an opaque vase is used, it may be partly filled with sand and water. The flowers may then be held in position by sticking in the sand, or tissue paper may be tightly wrapped round them and wedged in the neck of the vase. They must be fixed tight, or they may move during the exposure, which would spoil the picture. If they are to be photographed without a vase, that is, a photograph of the flower and stem only, it will have to be placed in the vase to hold it in position. A flower with a long stem should be chosen, the bottom of which should be fixed tightly in the neck of the vase by means of tissue paper. They should be placed on a box, the top of which must be level with the baseboard of the camera when in position. The top of this box should be covered with black cloth or velvet. The camera can now be placed in position, the lens of which should be exactly level with the center of the flowers, and the focusing screen must be upright. The camera must never look down, or up, on to a group of flowers, as it will distort them, and will spoil the effectiveness of the design. In photographing them out of doors, no difficulty will be found in planting the tripod firmly; but if taken indoors, the trouble is to get the tripod to firmly bite the floor. This can easily be overcome, after focusing, by slightly tacking some pieces of cork on the floor against the points of the tripod. They may be photographed by day, lamp, gas, electric, acetylene, or flash light. Daylight is preferable, as giving softer half-tones; but this, when the operator is engaged all day, cannot, of course, be used; therefore, of a necessity, one of the artificial lights must be used. If possible, they should be photographed indoors in a bright light, as out of doors the light is, except on dull days, too bright, which causes the flowers to come out too white.

"In choosing a room, one should be chosen free from vibration, as the slightest movement during exposure would result in failure, as flower studies do not lend themselves to impressionistic photography. They must be arranged about 5 feet from the window, with the background about a foot away at the back, and a large piece of white cardboard should be stood on the farthest side from the light, so as to

reflect some of it back on to the shadow side of the flowers. This cardboard must not, of course, come within the angle of view of the lens. In lighting the flowers, that which must be aimed at is to obtain delicate half-tones, not heavy shadows, as they will appear to run into the background, thus destroying the effect. The flowers must not be lighted from the front, as this will give them a flat appearance; but one side should be slightly brighter than the other, and the background, being dark, will give the relief. The advantage of using a black background is that the flowers cannot throw shadows on it, whereas, with a light one, the shadows will sometimes appear so grotesque as to utterly destroy the effectiveness. A narrow-angled lens is best to use, as some of the flowers, being nearer the camera than others, are likely to become distorted if a wide-angled lens is used. The greatest care must be taken in focusing, on account of the various positions of the flowers. A small stop should also be used. The exposure cannot, of course, be given absolutely correct without knowing the circumstances under which they are to be taken; but it must be distinctly understood that it is copying, therefore the object being nearer, will require a greater exposure than an interior or other distant object. Ordinary plates may be used; but if the flowers have any red or yellow in them, better results will be obtained with isochromatic plates. Whichever is used, they should be backed with some caramel or red backing paper, as the flowers, being of a light color against a black background, are very liable to have a halo round them, which the backing will prevent. Supposing the room to be an ordinary bay-windowed one, with all colored curtains removed to one side, and using a R. R. lens, stop $f/22$, isochromatic plates (medium rapidity), on a fairly bright day, the flowers being slightly yellow, an exposure of two to three minutes would be sufficient. It must be remembered that isochromatic plates will considerably shorten the exposure if the flowers are of a yellow or red color, as they are more sensitive to those colors than ordinary plates. If ordinary plates are used to photograph a yellow flower, it will come out considerably darker than it ought to, unless the exposure is very long, then the stems and other parts, being over-exposed, come out flatly; therefore, it is best to use isochromatic for colored flowers, but white ones are best photographed with ordinary plates. Splendid results can be obtained with either of the artificial lights mentioned above, if care is taken in illuminating the flowers. With flashlight and magnesium ribbon, it requires considerable care to get a good illumination. To obtain soft results, the ribbon or powder must be burnt about 2 feet away from the flowers, and a little more should be burnt on one side than on the other, so as not to have it flatly illuminated. A screen of tissue paper or ground-glass must be placed between the light and the flowers, so as to diffuse it and prevent heavy shadows being cast. Magnesium ribbon is easiest to use, and is better, as not giving so much smoke. The exposure with flashlight cannot be given correctly, as it will depend on the flash-lamp and the make of the powder used. With magnesium ribbon, four pieces of 6 inches each (6-inch lengths are the best to use, as they will burn better than pieces of a greater length) should be burnt on the side that is to be the most brightly lighted. On the other side, three pieces, or even less, may be used, according to the amount of shadow required. The magnesium ribbon, while being burnt, may be held in a pair of pliers. Electric light and acetylene gas give better results than hydrogen gas and lamp-light, as they are whiter, and thus more actinic. Ordinary plates are almost useless for photographing flowers by night, as all artificial lights have a certain amount of yellowness in them, which these plates are not very sensitive to. Isochromatic plates must be used, and a rapid brand selected, so as to shorten the exposure as much as possible. The focusing must be done by arranging lighted candles near the flowers, taking care that they are not too close, or the heat will cause them to rapidly fade. Great care must also be taken in the focusing, as a small stop cannot very well be used, on account of the increase in the already long exposure. The candles must be removed before exposure. If acetylene gas is used, two burners must be placed about 2 feet away from the flowers to one side, and on the other side should be placed another burner. If required, tissue paper screens may be used to soften the light. The exposure will be from fifteen to thirty minutes. With electric light, the lamps may be arranged the same as for acetylene, but the

screens must, of necessity, be used on account of the brilliancy of the light. The exposure will be about half that required for acetylene. Where hydrogen gas is to be used, incandescent burners should, if possible, be selected, as they give a more actinic light than the ordinary burners. The burners can be arranged somewhat similar to the above, either two on one side and one on the other, or one on each side, but the side on which the shade is required should have the burner placed at a greater distance than the one on the other side, otherwise the flowers will appear flatly illuminated. The exposure with incandescent will vary from twenty to forty minutes; with ordinary gas, from thirty to fifty minutes. Ordinary paraffin lamps may also be used, but these should have some good reflectors on the back of them. They should be arranged in the same positions as for either of the artificial lights mentioned above; but, the light not being so strong as gas, the exposure will be nearly an hour. Lastly comes the development, which is very important. A developer which tends to give a very brilliant or harsh negative should not be used, but one which gives a soft one is best. A mixed developer, such as the following, will suit admirably:

" A.—Metol	40 grains.
Hydroquinone	50 "
Sulphite of soda	120 "
Bromide of potassium	15 "
Water to make up	20 ounces.
" B.—Caustic potash	180 grains.
Water to make up	20 ounces.

"For use, take equal parts of each.

"The eikonogen developer is also suitable. The 'Paget' formula is a very good one:

" No. 1.—Eikonogen	$\frac{1}{2}$ ounce.
Sodium sulphite	$1\frac{1}{2}$ "
Potassium bromide	8 grains.
Distilled water to make	30 ounces.
" No. 2.—Potassium carbonate	1 ounce.
Distilled water to make	10 "

"For use, take 3 parts of No. 1 to 1 part of No. 2. The effectiveness of the results will, of course, depend upon the artistic skill of the operator; but if the above is carefully followed, good results ought to be obtained."



PREPARING NEGATIVES FOR PRINTING.*

BY EDWARD DUNMORE.

[A Paper read before The (London) Photographic Club.]

I WILL describe, to the best of my ability, the various methods adopted for the improvement and modification of negatives, prior to placing them in the hands of the printer.

In this matter there is nothing new, for, practically, the limit of improvement was reached years before our modern gelatine films were thought of. There are, of course, some few plans rendered possible by the robust character of a gelatine film that were quite impossible with the more delicate collodion ones, and to which I shall allude in due course.

As the necessity for doctoring negatives has always existed, and the faults and shortcomings remain of a similar character, the means of improving them will of necessity be of a stereotyped nature.

The very question of doctoring, faking, touching, or improving negatives, or whatever term may be employed, has from the first been a subject for argument, and will possibly remain so. We may assume that, whatever hand work is put on a negative, it is presumably for the purpose of improving it: whether it always has the desired effect is another matter; any way I will waive the question of legitimacy

* *British Journal of Photography.*

and recapitulate the plans that have been, and are, adopted to successfully modify or improve the negative.

As negatives vary in character, the treatment of each has to be adapted to its own peculiar requirements. We will suppose a number of negatives are placed in our hands to make the best of. The first thing to do is to sort them, and for convenience we will divide them into two classes: the too dense, and the too thin. The too thin ones may be grouped into the over-exposed, the under-exposed, the under-developed, and correctly exposed; and the too dense into under-exposed, over exposed, over-developed and correctly exposed. In addition to these are local faults, such as spots and pin holes, abrasions of the film, and irregularities of development or density. In treating these negatives, let us first take the thin negative from over-exposure, one of the most common faults that occur. Now, here we have a negative full of detail, almost too much in fact, and one that will produce only a poor, insipid print, unless it can be in some way improved. If we start intensification without giving it any previous preparation, we only make a slower printing negative with little improvement in brilliancy, therefore the first thing to do is to remove some of the image from the deepest shadows by submitting it to a bath of ferricyanide of potassium and thiosulphate of soda, 5 grains of each salt to the ounce of water.

(Continued in May issue.)



ASPHALTUM IN COMBINATION WITH THE CHROMATE PROCESS.*

TRANSLATED BY HENRY DIETRICH.

HISLOP describes a copying process with chromates and asphaltum as follows: To a solution of 60 grams gum arabic, 300 cubic centimeters water, 0.7 gram chromic acid, and 30 cubic centimeters of a saturated solution of bichromate of potassium, sufficient powdered asphaltum is added to keep the solution in an easy flowing condition. With this the plate is prepared. After drying, expose and develop with sawdust and water. Finally wash, dry, heat and etch with chloride of iron 1 : 3. Fish glue may be used in place of gum arabic.

Professor Husnik suggests in his work about heliography regarding the application of chrome gelatine in connection with asphaltum, the flowing of a metal plate with an asphaltum solution and then coating with a very thin chrome gelatine solution. The same is then exposed under a negative and is developed in hot water, by which the asphaltum at the not exposed parts of the chromate coating is laid bare, and is dissolved with a mixture of 2 parts of olive oil and 1 part of oil of turpentine. The plate is now washed with soap water to remove the gelatine without injuring the asphaltum layer underneath. The asphaltum under the gelatine is sufficient for a fore-etching.

*From Lainer's *Photo Chemistry*.

An undeveloped pigment picture can also be transferred upon the asphaltum layer, which is developed with warm water.

Léon Vidal uses a combination of chrome albumen with asphaltum for a photozincographic printing process in lines. A prepared zinc plate is coated with an asphaltum solution (5 grams asphaltum in 100 cubic centimeters benzine). An extra coating of 50 parts of the white of an egg, 50 parts of water and 5 parts of chromate of ammonia is given to this after drying.

The asphaltum printing process is said to give a complete picture after one to two minutes' exposure in the sun. For development the exposed plate is put in red, or blue colored water, whereby the albumen remains colored at the exposed parts. After drying, the development is continued in benzine and oil of turpentine mixture (1:4), whereby the exposed asphaltum dissolves. It is then placed in water and then for fifty seconds in a 3 per cent. solution of diluted acetic acid. After this the plate is washed, dried and then rubbed in with oil, which will penetrate all exposed parts. After a quarter of an hour the plate is dried again, to remove all superfluous oil, washed with water, and then with benzine, to remove all albumen and asphaltum. After such preparation the plate is ready for printing, and a simple rolling with fatty ink is sufficient for the appearance of the picture.

Hofrath Demschinsky describes a chrome albumen process with asphaltum covering. The whites of two eggs are beaten and mixed on the following day with 224 cubic centimeters water and 2 grams bichromate of ammonia and ammonia, until yellow coloration takes place. The polished zinc plates are rubbed off with ammonia, washed, and flowed four times from each side and heated slantingly over a weak flame, so that the remaining liquid can drip off. The film will dry with a gloss, if sufficiently heated; if not, it will become matt. After printing, the plate is flowed with a filtered solution of 150 cubic centimeters benzole, 450 cubic centimeters chloroform and 5 grams asphaltum, which is colored pretty intensely with methyl or benzyl-violet. After drying, heat faintly, develop in water by rubbing slowly with a cotton tuft, dry and heat again, whereupon the plate is ready for its first etching.



SOME NEW METHODS OF DEVELOPING DAGUERREOTYPE PLATES AND OF PHOTOGRAPHING ON COPPER.

BY COLONEL J. WATERHOUSE, I. S. C.

(Concluded from March number.)

A PLATE fumed over the chloro-bromine solution for one minute was a dark orange, and sensitive to the medium green and all the blues and violets, but not to the yellows and reds.

Another sensitized in the same way for ninety seconds was red with a yellow-green reflex, and was very insensitive to all colors except the cobalt blue.

The most sensitive plate was one chloro-bromized for one minute, the color being a rose or dark-copper color, with little special reflex. It was exposed two minutes in the sun, and was impressed by all the colors of the scale, the deep blue being strongest, then the lavender and orange; next come the yellows and greens, the violets (blue and red), the greenish blues, the reds, and finally the yellow-green and deep ruby. Part of this extra-sensitiveness was no doubt due to the longer exposure, but some of it is, I think, also due to the peculiar color of the plate.

A similar plate exposed for the same time under a brightly colored transparent print, and developed with ferrous oxalate, gave a very clear image, in which all the colors came out well, including the yellow and red, but was not so sensitive for the blues or greens.

Similar results were obtained by contact printing under the color scale for a sufficient time to produce an image strong enough to stand fixing with weak cyanide solution. These plates were not developed, as it was found that by exposure they took a dark, steely-blue color. Some of the plates were purposely given a preliminary exposure on Becquerel's principle, to see whether by so doing they would become more sensitive to the yellow and red, or by bleaching out show some traces of color. There was no bleaching out, possibly because sufficient time was not given, but, while many of the plates proved insensitive to the yellow and red and other colors, some showed an unusual increase of sensitiveness for the yellow and red as compared with the blue. One plate chloro-bromized for thirty seconds, showing red with a purple reflex, which was exposed to light for one minute till it took a dark purple color, and then exposed under the scale for five minutes, shows this most markedly. All the colors are impressed, the orange and yellows being particularly distinct. There is, in fact, little difference between the impression of the lighter shades of yellow and that of the pure blue. The greens and greenish blues were very faint, also the violets.

A similar plate, exposed under a colored transparency for about twenty minutes, gave quite a strong blue-bronzed image, which was not much reduced by fixing in hypo. Here, again, the yellow is quite as sensitive as the blue, if not more so, and the lighter green has given a good impression, as you will see by comparison of the original colored transparency, and the impression on the copper plate.

These differences in sensitiveness to color in the bromized copper plates, depending apparently upon the color of the plate, either as originally given in the fuming box or after a preliminary exposure to light, are very curious, and open out quite a new line of investigation.

I am sorry I have not yet been able to obtain any more practical results from these rough experiments. I had not intended to bring forward the subject at present, but thought it would be of interest in connection with the modified method of daguerreotypes. I hope to be able to carry on the investigation, and from these and my earlier experiments I believe it will be quite possible to obtain an image direct on the copper plate, capable of being etched by perchloride of iron or some other suitable etching fluid.

SOCIETIES



THE Trenton Photographic Society at a recent meeting elected the following officers for 1899 :

President, Wm. C. Lawrence ; Vice-President, Harry G. Aitken ; Secretary, Grant Castner ; Treasurer, Harry M. Holden.

THE Y. M. C. A. Camera Club, of Reading, Pa., has lately organized under the following officers :

President, Otis Wanner ; Secretary, John J. Strickland ; Treasurer, O. J. Leiby.

THE Greenville Camera Club opened their new Club House on the 10th of February, with a slide lecture, and supper. The new House is said to be very complete in its appointments, and the Club is full of anticipation of the times to come.

AT the annual meeting of the Amateur Photographers' Society of Pittsburgh, the following officers were elected :

President, E. E. Keller ; Vice-President, H. L. Christy ; Secretary, J. H. Hunter ; Treasurer, W. J. Hunker.

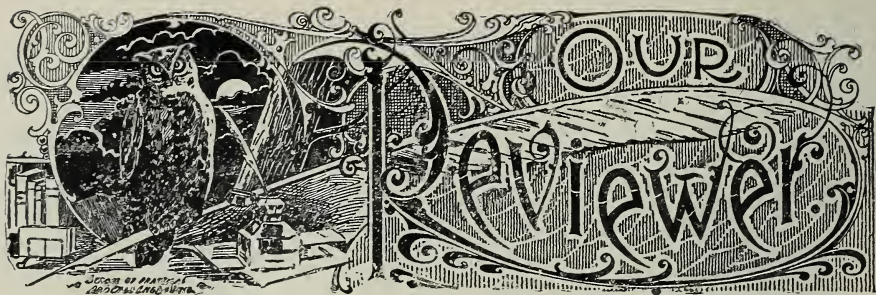
THE officers of the Oswego Camera Club for 1899, are :

President, W. H. Cramer ; Vice-President, W. B. Burleigh ; Secretary, Geo. Fairchild ; Treasurer, Nelson Morrow.

AN amateur Camera Club has just been organized under the name of the "Rockville Camera Club" of Rockville, Conn., with the following officers :

President, T. S. Pratt ; Vice-President, E. F. Badmington ; Secretary, C. F. Gubitz ; Treasurer, F. H. Holt.

THE first exhibition of the Syracuse Camera Club was held in its new quarters in University Block, Syracuse, in February ; the exhibition was a great success in all ways and has given considerable stimulus to the practice of photography in that city.



THE Camera Club, of New York, is to be congratulated upon having the ability—artistic, editorial, executive and financial—to maintain such an important and valuable official organ as CAMERA NOTES has proven itself to be during its two years of publication. It is, we believe, far and away the best of its kind in the world, and stands as a notable example of good taste in selection and execution of its illustrations, value and originality of its contributed articles, and make-up of its pages.

The Club is fortunate in having in its membership gentlemen capable of scoring such a success as has been achieved by its editorial and managerial staff.

THE Journal of the Photographic Society of Philadelphia appears with the January number for 1899 in a new dress, and is a very dignified and attractive number. It is intended to be "the official medium of communication between the society and its members," and the initial number of Volume V contains a short description of the Society, which was founded in November, 1862, together with the management and standing committees for the present year, the proceedings of the Society and the report of the Philadelphia Salon, and also of the members' Annual Exhibition in 1898. We are glad to note in the indications that appear from time to time that the larger and more prosperous clubs appreciate the value to themselves of this kind of literature.

VOLUME I, No. 1, of the "Camera and Dark Room," comes to us as the official organ of the New York Society of Amateur Photographers, and bears date of February. It is of octavo size, and is quite pretentious in its get up. It also contains, among other matters, a brief

sketch of the Society and its officers, with club notes and miscellaneous articles.

THE catalogue of the Second Annual International Photographic Salon and Exhibit of the Pittsburgh Amateur Photographers' Society, lately held at the Carnegie Art Galleries, deserve special mention. It is very tastefully gotten up and consists of 80 pages, with the names of exhibitors and titles of the pictures hung, together with sixteen half-tone illustrations from some of the more prominent pictures in the exhibit. The size of the book is 7 x 9, and the cover, a dark olive green, printed in blue-black, with a light scroll decoration in yellow, is extremely rich.

THE *Aristo Manual*, just published by the American Aristotype Company, of Jamestown, N. Y., is a most valuable booklet for all users of Aristo papers. Its size being $3\frac{1}{2} \times 6\frac{1}{2}$, it easily fits the pocket and may become a constant companion to the worker: It is filled with valuable instructions for the manipulation of the various papers manufactured by this company, including printing, toning, fixing, washing, production of sepia tones, and instructions for guidance in using the single toner. It very completely covers the many points which are constantly rising in the printing and toning.

WE have received from Messrs. Richards & Company, of Ballarat, Australia, a sample of their studio work, printed in the old time albumen paper, which is worthy of special commendation. the delicate handling of the veil and hair being very noticable. We do not remember to have seen a better example of detail under fabric than this. The posing and lighting and entire technical treatment of the subject are excellent.

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ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

MAY, 1899.

No. 5.

THE VIEW PHOTOGRAPHER.

AS the season advances and the time for outside work draws near, it may be in order to consider some phases of the work presented, and such questions as may have to do with enlarging the possibilities that it presents to the professional view photographer, and incidentally adding to his income.

And the first question to be considered is whether we shall push for business or allow business to push for us. On this one query lies much of the success or non-success of our future. Photography is a "good thing," but it needs to be pushed along, and the man who succeeds is he who, realizing this fact, is constantly working out some scheme which will increase his stock in trade and bring him into closer touch with those about him, from whom he must expect to derive his income.

Is there anything that the average view man or professional photographer can do to increase his prosperity beside waiting in his office for the order that comes occasionally, or in his gallery for a chance sitter who is long in materializing? The answer to this question is an emphatic yes, and its truth is borne out by the experience of many a well-to-do photographer, who has seen deeply into the possibilities of his profession, and who by the exercise of hard work, good judgment and some little risk has made for himself more than a comfortable living, and has established for himself a reputation and position in the community of which he forms a part.

Is it not true that many of us unconsciously fall into the habit of the hibernating animals, and go to sleep in the winter, some of us only waking up in season, to go to sleep again for the next? Of course, we go about in the meantime doing, in a sort of trance, such work as comes to us to be done, but may we not by waking up and putting more thought and individuality into our business double our profits in the coming year? We believe that in the large majority of cases it is easily possible.

How, then, shall we go about to accomplish it? Firstly, by judicious advertising—and by this we do not mean newspaper or magazine

advertising—simply seeing to it that our name and fame is kept prominently before the people of our community in a clean, dignified, healthy way, and that our work is as much in evidence as possible. Keep the quality of both high, and do not allow either to deteriorate.

We should make our work advertise us, and that work should be of as varied a nature as possible.

If our gallery work is slack, let us make the opportunity to obtain negatives of some of the new residences or public buildings going up in our vicinity, or a picture of some local point of interest or beauty. This is, we know, something in the line of a speculation, but the man who has these negatives at hand, and is possessed of ordinary business tact, will turn them to material profit before they have grown old. "Faint heart ne'er won fair lady," nor need he who waits for work to come to him and takes no chances toward compelling the smile of prosperity expect Dame Fortune to coddle him for one moment. Life is too short, and the dame is too busy supplying the wants of those who boldly demand their rights, to confer gratuitous favors on the unambitious "waiting list."

Negatives of this kind made from time to time can be utilized in many localities for the making up of booklets of views, which, if placed on sale in one or more prominent stores or offices, attract attention to our establishment, are the means of constantly advertising us, and serve to bring in a very considerable income over and above their cost of production in many cases that have come to our notice. This is advertising that, instead of costing a lot of money, is often a *direct* source of revenue.

Every book of this kind that is circulated brings us into closer touch with those about us, and all work of a similar nature helps to raise our standard in the community. Acquaintance with the largest possible number of people in our own town or city is of vital importance, and it should be an acquaintance, not of the "hale-fellow-well-met" kind, but of a pleasant, genial, dignified and self-respecting nature. We may never know who our next customer will be, but the photographer who has the largest acquaintance of this latter kind will be the most busy and most prosperous. Such acquaintance as this presupposes sterling qualities on both sides, and the man who respects his profession will be most likely to be respected by those to whom he caters. What an advantage is possessed by the photographer who can go to the men of position and prominence about him, feeling that he is their equal in many things and their superior in one, at least—his own profession. Such a man has a right to bring to their attention his ability to provide them with something that will be a source of pleasure to them and their friends, and he who fails to do this on all proper occasions fails to use one of the elements of success within his grasp.

We must not, however, make the mistake of crying our wares above their value, but be very sure in our own minds that we can produce work of good quality, and then let it be known. Study the works of the best men in art. Cultivate our own art instinct by every possible means. Keep posted on the progress of our times, and first, last and always push on for more work and better quality. Be alive to every opportunity that presents itself, and take the initiative in all cases that hold out a reasonable promise of a fair return. These are hustling times, and history is making rapidly. If we desire to keep in the procession, we must be keenly awake and earnest in our determination to force the issue with fortune. The present year is a good one in which to make the attempt.

Items of Interest

THE second meeting of the Professional Photographers' Club of Allegheny County was held on the evening of March 21st at 357 Fifth avenue, Pittsburgh, and was attended by the principal photographers of Pittsburgh and Allegheny. Constitution and by-laws were adopted, and the following officers were elected for one year: President, B. H. L. Dabbs; Vice-President, W. E. Perry; Secretary, H. O. Baird; Treasurer, Paul Fallert. The object of the organization is to secure for the photographer a better return for his work. The meeting was well attended, and interest in the proposed work was enthusiastic.

THE Photographers' Association of Virginia has just concluded its third annual convention held at Lynchburg, Va., on which occasion about fifty members and ladies were present. A gold medal was awarded as first prize in Genre class to R. W. Holsinger, of Charlottesville, and the second prize, a silver medal, in the same class to A. H. Plecker, of Lynchburg. In Class A, portraits, figures or groups, the first prize went to Dean, of Harrisonburg, and the second to Coles and Halliday of Durham, N. C. In Class B, portraits, heads or figures, first prize to Eutsler, of Danville, and the second to Cheyne, of Hampton. Class C, portraits, cabinet size, first prize to Freeman, of Norfolk; second to Alderman, of Greensboro, and third to Holsinger, of Charlottesville. Addresses were delivered before the Convention by Mr. Harry Fell, Mr. William Slater, Professor J. H. Griffith, and others. The officers of the Association for the next year are: President, O. W. Cole, of Durham, N. C.; First Vice-President, William Freeman, of Norfolk; Second Vice-President, M. L. Clark, of Richmond; Third Vice-President, C. P. Wharton, of Raleigh, N. C.; Secretary, H. V. Lineback, of Richmond; Treasurer, R. D. Holsinger, of Charlottesville.

WE understand that the International Union of Photography will hold its meeting this year at the rooms of the Gesellschaft zur Förderung der Amateur Photographie in Hamburg, from the 25th to the 30th of August. Many important questions are considered at the meetings of this Union, which was founded in 1891, and which includes several of the principal photographic societies of the world. The President is J. Maes, Belgium. Vice-Presidents, E. Juhl, Germany; Professor Davanne, France, and Captain Abney, England; Treasurer, L. Stappers; Secretary, Professor Puttemans.

It is announced that Austria is to have a Public Ministry of Art, the ministry to be made up from four classes, artists, men of science, friends or patrons of art, and officials, its chief function being to ad-

wise the Department of Public Education on matters pertaining to art teaching and culture. We note with pleasure that Dr. Eder is a member of this commission by virtue of his position as a director of the Imperial Graphic Institute of Vienna. His appointment may be considered a recognition of photography, as Dr. Eder has been intimately associated with its progress for many years past.



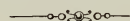
PHOTOGRAPHY plays an important part in the use of carrier pigeons in connection with communication between steamships and the shore, and also in such application of the service as is found in military and naval matters. The dispatches to be sent by the carrier pigeons are first written in the usual way, either with pen or type-writer, after which they are reduced by photography and printed upon thin celluloid, which is rolled and enclosed in a quill or rubber tube and attached to the wing of the bird in such a way as not to impede its flight. This system was first put into use during the Franco-Prussian war, at which time a thin film of collodion was used instead of celluloid, but the latter medium is now preferred.



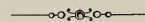
READERS of the BULLETIN will join in congratulations to Mr. Iliffe and his son, of the London publishing firm of Iliffe & Sturmeay, on their rescue from the late terrible disaster in the English channel. These gentlemen were both on board the ill-fated *Stella* when it was wrecked on the Casquets, but were fortunate in being among the few who were saved.



THE BULLETIN is in receipt of a photograph of the little daughter of Mr. and Mrs. E. E. Gore, traveling photographers of Coates, Kan., which is interesting from the fact that it is believed that the little one is the only child on record who was born in the darkroom of a photographic tent. May she live long and prosper.



THE sixth annual convention of the Photographers' Association of Missouri is to be held in St. Louis on August 22d, 23d and 24th of the present year. A grand prize is offered, open to the world, for three photographs, 14 x 17 or larger, framed optionally. The Genre class, three distinct photographs, any size, is open to photographers in the United States, in addition to a number of class prizes, including an amateur class of six pictures, any size or subject. Entry blanks, rules and regulations may be obtained of the Secretary, A. S. Robertson, 3518 Olive street, St. Louis.



PROFESSOR W. H. PICKERING of the Harvard Observatory has just announced the discovery of a new satellite of the planet Saturn. This makes the ninth addition to the satellites of Saturn, and is the first discovered in fifty years. This discovery is due to the use of the new Bruce telescope at Arequipa, Peru, and was recorded on the 16th, 17th and 18th of August, 1898, but the negatives have been delayed in transmission to Cambridge by the war. The minute size of this satellite makes it only possible of discovery by three or four telescopes in the world, and Professor Pickering is to be congratulated upon being the first to announce it.

It is announced on good authority that Miss Catherine Wolfe Bruce, to whom Harvard College is indebted for the telescope named in the preceding item, has presented to Columbia University of New York, for use in its astronomical observatory, the sum of \$10,000. This gift is in addition to numerous others which Miss Bruce has made to Columbia and other universities, and will make possible many valuable investigations which have hitherto been beyond the reach of the observatory.

PROFESSOR R. W. WOOD, of the University of Wisconsin, announces a new method of photographing in natural colors which it is believed will be capable of important achievements. Professor Wood obtains his reproductions in colors by diffraction, the pictures being on glass and not only colorless, but, in ordinary lights almost invisible, and is obtained by the use of gratings of variable spacing. The lines being very fine, parallel, and equi-distant, are ruled to about the number of two thousand to the inch. The colors are said to depend solely upon the spacing between the lines, and are pure spectrum colors or mixtures of the spectrum. Further reports on this matter will be looked for with interest by all concerned in photography.

WE note that Mr. Pirie MacDonald, who is well known to American photographers, has been awarded first prize and honorable mention on two pictures submitted to the Birmingham, England, Photographic Society. We are glad to see that Mr. MacDonald's reputation is becoming international as well as national.

A VERY interesting description of the "fastest camera in the world" has lately appeared in a number of the daily papers, but unfortunately details are not at hand as to what may be the motive power of this camera. It is an open question whether it is to be propelled by steam, electricity, compressed air, or the wind of the operator. It is interesting to note in this connection that no mention is made of any lens, but the specifications require that the camera shall be capable of making a successful exposure in $\frac{1}{600}$ part of a second. At the present rate of progression it seems quite possible that we may before long reach the point where phenomenal negatives may be made without even a camera.

THE recent requests of the War and Navy Departments for photographs taken in connection with the late war, is reported to be bringing in a very large number of prints, and with the material in the hands of the departments, there will be an admirable opportunity for a pictorial record of the war such as has never before been conceived of. Its publication will be looked forward to with anticipation.

AN International Lantern Slide Exhibition is announced by the Association Belge de Photographie to be held in Brussels on the 15th of October of the present year. The competition is divided into four classes, and twelve slides must be sent in each class. Entry blanks and full information may be obtained from the general secretary, M. Vanderkindere, 97 Avenue Brugmann, Brussels.

PHOTOGRAPHERS' CLUB OF NEW ENGLAND.

Boston, March 9, 1899.

A MEETING of the Executive Board of "The Photographers' Club of New England," was held at the Boston Tavern, March 9, 1899, at 3 o'clock P. M.

The following members were present: Mr. H. Schervée, President; Mr. G. H. Van Norman, Treasurer; G. E. Putnam, Secretary, and the following Vice-Presidents: Mr. M. D. Hanson, of Maine; Mr. G. M. Bolton, of Connecticut; Mr. H. H. Pierce, of Rhode Island.

The Membership Committee's report was accepted. The Entertainment Committee gave a schedule, which was read and discussed in full, and which, with some changes, was then accepted. The Committee on Prizes submitted the following rules and regulations for exhibits at the next Annual Convention, October 5 and 6, 1899:

First.—The exhibition shall consist of eight classes, viz.: Two portraits; one Genre; one Exterior Picture class; one Landscape and Marine class. Also one portrait and one Genre class open to exhibitors outside of New England only.

RULES AND REGULATIONS.

A. All exhibits must be suitably framed, without glass.

B. All exhibits must be in the hands of the Committee on Hanging on or before October 3, 1899.

C. No exhibitor's name shall appear on any picture; each exhibit will be numbered.

D. There will be no given prizes but, instead, the judges shall open a salon and shall, the day previous to opening of Convention, admit such pictures as, in their opinion, are worthy of that honor.

If, to the satisfaction of the judges, there should appear any pictures of sufficient merit to warrant any higher honors, the judges shall so report to the Executive Board.

The Board may award to such pictures any honor they may decide upon.

The judges shall consist of two (2) artists and one (1) photographer, and shall be appointed by the President and known only to him.

Should any picture receive higher honors than being admitted to the salon, and, through the courtesy of the exhibitor, become the property of this association, said picture shall receive a permanent place in our salon.

The classes are to be as follows:

Class A.—Six (6) pictures 10 inches, or larger.

Class B.—Six (6) pictures, miniature size, to 10 inches.

Class C.—Genre class: Three (3) pictures, 10 inches or larger.

Class D.—Exterior pictures: Six (6) pictures, any size.

This class to be judged largely on picture effects and composition, and must be composed of one or more human beings.

Class E.—Landscapes: Three (3) pictures, any size.

Class F.—Marines: Three (3) pictures, any size.

Class G.—To exhibitors outside of New England, one (1) portrait.

Class H.—One (1) Genre picture.

A motion was made and seconded that Mr. Schervée's suggestions in regard to prizes be accepted. Carried.

A motion was made and seconded that the Chair appoint a committee to draft changes to the Constitution, same to be presented at our regular meeting. Carried.

The Chair then appointed the following Committee:

Mr. G. H. VAN NORMAN,

Mr. M. D. HANSON,

Mr. G. M. BOLTON.

Moved and seconded that we adjourn, at 5.40 P. M. Carried.

Adjourned.

(Signed) G. E. PUTNAM,
Secretary.

To the Editor :

DEAR SIR,—In connection with this report, allow me a few lines in support of this, our no-prize convention.

It would have been very pleasant to myself, and, no doubt, to a great many photographers, had the National Convention taken this step, and I also predict that it would have been a grand move. The sentiment shown by a great many of our leading photographers has not, for the last two conventions, been for exhibitions for prizes, but rather sending of complimentary exhibits. This strengthens me in the belief that a medal not earned is worse than no medal at all.

Why should a picture receive a medal just because there happened to be no competition, or no pictures entered worthy of such honors? This cannot be just to the worthy competitors nor to the public, whom we have for the last few years, after hard labor, got to acknowledge that photography is an art, and photographers composed, not wholly of mechanical, but also of artistic, men.

Would not our conventions have a great deal more dignity were they conducted on the salon principle? I do not object to a gold or silver medal being awarded to any masterpiece. I only object to the wholesale distribution of medals and awards that has, for the last few years, prevailed at all our conventions.

It would afford me a pleasure to come to the National Convention this year and see complimentary exhibits from our leading men. A much better feeling would surely prevail, and much more good would be done to all of us.

I am in hopes that those who sympathize with this idea will exhibit at our National Convention; and also, both as a personal favor and in support of this radical step, favor us, the New England Photographic Club, with one or two of their choice pictures for our convention, October 5th and 6th.

I would be most pleased to hear from any one interested in this move.

Very respectfully yours,

H. SCHERVÉE,

President Photographers' Club of New England,
Worcester, Mass.

WONDERS IN PHOTOMICROGRAPHY.

By J. E. P.

IN contemplating the wonders of inventive progress, being aware that hundreds of thousands of inventions have been thought out, and, notwithstanding this, are being continually mentally born, the average human believes that, wherever there is a need, the man to meet it with his inventive product will soon be found. And if this be so, it is especially true of the American inventor.

In the realm of mechanism and chemistry, and in combinations of the two, so much has been accomplished that all things, even the flying machine, seem possible to the man of brain and application, who resolves to bring forth a new idea in the dominion of creative thought. Genius and perseverance stand ever at the threshold of Nature's secret chambers, and, while yet the world is wondering at a new discovery for its benefit, another comes forth with its always accorded claim to public attention, whenever it is a true benefactor. And so, till the knowledge of man reaches its final limit, and his retrogression begins (?), will the inventive idea grow and accomplish wonders.

But, with all the progress of science, there never has been invented a machine that will fathom the true process of thought or unlock the door that leads to the place in the "human tabernacle" wherein lie the first causes of life and action. Yet it has been said that Dr. Elmer Gates of the District of Columbia has made such a machine, and that he can with it see into the secret process of the brain, and behold the vibrations of nerves along which flashes the thought message to the storehouse of its keeping.

This, of course, is not true. Dr. Gates is making experiments in the field of psychological research, but is far from having laid bare the secret springs of thought. That he fully looks forward to the time when he can easily explore the living human anatomy and obtain most interesting results is assured in the following, written by him some months ago :

"I expect to see, within a year, a photograph made of the inner tissues of the body of a living person by means of photomicrography and ordinary photography with invisible rays. I do not mean a skiagraph, such as produced by the X rays, but a photograph of the details of the surface of organs and their inner structure. I have provided myself with a heliostat, made for me by the Société de Genevoise. The mirror is 12 inches in diameter, and it will throw a ray of sunlight into my microscope with much precision. This beam will be condensed into a beam at least one hundred times less in diameter, then rendered parallel, and thrown through the microscope, either before or after having been rendered monochromatic by means of suitable prisms. A microscope made especially for monochromatic light will replace those of usual form. I am experimenting to get lenses which will act upon the invisible rays in a manner the same as glass acts upon luminous rays. If I achieve success in this field, I shall expect to obtain photographs of the interior of the body and photomicrographs of interior tissues of the living body."

One has only to go through Dr. Gates' laboratory to see that he is a man of many and interesting ideas. The writer had the pleasure of going through this place recently and of beholding some of the mechanical apparatus there used in connection with scientific experiments. These investigations take in, with other matters, electricity, music and X-ray photography. In the electrical field Dr. Gates has, I am informed, made some important discoveries. He has also used solar heat in connection with storage batteries, obtaining interesting results.

At the laboratory location—Chevy Chase, near Washington, D. C.—a large building is being finished, in which will be placed musical instruments, such as pianos and organs, and experiments in sound will be carried on here. It is a well-known fact that some musical notes require more force than others to produce, and that by properly gauging this force, not only is energy saved, but correct modulation and expression are gotten. This will form part of the investigations in the musical department.

Of course, all such work is of interest, but that which Dr. Gates has already accomplished in connection with microphotography, with his invention, the mega, or double microscope, should take precedence in the scientific field of his research. With this apparatus, in which one microscope enlarges the image magnified by the other, the result being cast upon the sensitive plate in a camera, objects that are normally invisible are made to appear plainly to the observer, in many instances showing wonderful detail before unknown.

The mega microscope has given magnified photographic results of 360,000 diameters, and its possibility, according to its inventor, far exceeds this, running up into millions of diameters. Dr. Gates says, in speaking of his work in this particular, that, with a $\frac{1}{6}$ -inch objective in the first microscope, and a $\frac{1}{2}$ inch in the second, he has resolved markings and details in microscopic objects which could not be resolved with the best $\frac{1}{16}$ -inch apochromatic instrument of high aperture, and that, when higher objectives than a $\frac{1}{6}$ and $\frac{1}{2}$ are used, the eye no longer sees the image, but the sensitive plate comes to the aid and photographs the otherwise invisible image.

In describing his photomicrographic apparatus Dr. Gates says in part in a published article: "I have arranged to exclude from the interiors of the microscopes and camera all dust particles and aqueous vapor globules. The light can act cumulatively, hour after hour and day after day, if necessary, and the photogenic changes made on the sensitive plate will result wholly from the action of the image. From some tests already made I think I am safe in saying that, owing to this device, I shall be able to photograph with less than the $\frac{1}{10000}$ part of the intensity of light formerly considered necessary. This improvement is applicable to photography in general, but especially so to photomicrography. First, by using the wider lenses of the double microscope, I photographed with the $\frac{1}{13000}$, the usual amount of light, thus making a magnification of 360,000 diameters, or 129,000,000,000 times the area possible. Exclusion of dust particles promises to per-

mit the use of a hundredth part of this latter amount of light; that is, it makes possible the photography of over 3,500,000 diameters, or over 12,000,000,000,000 times the area."

A better description of the apparatus which does this wonderful work is as follows: It consists of a number of parts arranged in direct line along a table. First comes an arc lamp-holder, which converges to the eyepiece of a microscope; then follows in order the second microscope, the condensing and parallelizing lenses, an alum filter, and, lastly, the camera. The whole arrangement is connected principally by supporting frames, and thus kept immovably in proper line.

The arc lamp used is supplied with electricity from the laboratory's 500-volt alternating current, and throws its light directly into the first microscope, thence into the second instrument, and on through the parallelizing lenses and the alum filter to the camera, where the object, however small, is made to reveal all its structural secrets, and to remain in photographic record.

It is an interesting fact that the photographic camera plays such an important part in bringing to sight long-hidden natural forms, and that without the sensitive plate many of these could not be revealed. The discoveries here mentioned suggest immense possibilities in the photomicroscopic and phototelescopic field. In the latter particular, the great instrument at Paris may give to the world some wonderful results in photographs of objects on the moon and on Mars—results that may completely revolutionize old theories regarding objects and conditions on the lunar orb. And in the photomicroscopic pursuit many new discoveries are entirely possible, among them disease, the cause of, cure and prohibition. With all of present-day medical science, the human body is still very much a mystery. But, if the inmost secrets of living human tissue can be pictured in all their minuteness, showing Nature's machinery in operation, and its enemies at their deadly work, science will have indeed made a prodigious stride toward man's protection and earthly comfort.

Let us step to the beginning of the twentieth century, and anticipate in vision one of its great scientific triumphs in connection with photomicrography. It is night. A thousand eager, wondering people sit with their eyes fixed upon a screen whereon is seen the inner human anatomy carrying on its life-giving functions. The main engine (the heart) is pumping, pumping away, while the red current flows in and out through the orifices, bearing upon the rosy tide, intermingled with the white corpuscle, myriads of strange forms (bacteria and germs), that swirl through the arterial and venous system, seeking lodgment at the most vulnerable place.

Lungs are throbbing, nerves are quivering, and the brain (the "central office" of the "electric system"), with its network of "wires," connects and disconnects the thought cell, and preserves the concatenation of idea as the thought message flashes from "station to station" in the realm of gray matter and knowledge.

And thus shall man know himself, as the picture unfolds; and, knowing, stand dumb and wondering in the "presence of himself."

THE RELATION OF PHOTOGRAPHY TO ART.*

BY JAMES CRAIG.

IN choosing for a subject the relation of photography to art, one feels that he labors under the great disadvantage of coming after a host of others who have written on the same theme. To most who read the current literature of photography, it must seem a field reaped and gleaned to the last straw, and they are doubtless weary of the apparently interminable, stale, and oft-repeated platitudes that are constantly to be met with. Yet the subject is a very wide one, and it is in the hope that I may be able to adduce something not altogether trite that I venture to make the following observations and suggestions: There is so much "special pleading" in debatable subjects such as this, that one who wishes to write to any purpose must, so to speak, scourge himself into an attitude of impartiality. It is easy to write in the contemptuous manner of many art critics who decry the art claims of photography, and it is also easy to take up the spread-eagle style which characterizes certain writers in the photographic journals and claim too much. Perhaps what one feels most strongly in this, as in most other subjects on which opinion and feeling differ, is, that there is an element of right on both sides, and that the most important function of any writer is to endeavor to discover the position of the medial line of truth, and to show that in some cases the conflict may be more apparent than real, and in others that there is no necessity for conflict at all.

At the outset, it must be admitted frankly, fully, and without reservation, that the best work of the artist of genius is far superior in almost all essentially valuable qualities to anything yet achieved by the photographer, and, it may be added, to anything that in the future any possible discovery—even the mastery over color—will enable him to achieve. Yet, after all this has been admitted, photography is valuable—is of very high value, not only in its scientific and merely recording aspects—but as a means of securing those subtle and rare qualities which the artist strives to gain. It was for long the reproach of photography that it could not render what are called "effects." That it is difficult to render in a photograph the rarest, most delicate, and most exquisite of the phenomena of light and atmosphere is true; that it is impossible to secure many of the finest of these effects is not true. But in order to the highest attainments in this direction there must first be in the photographer the capacity to see and to feel these things, and also the knowledge of processes and methods by which the tenderest, as well as the most powerful, effects may be produced. There can be no doubt that, as time goes on, higher and still higher qualities are demanded in all work that aims at distinction. It is now clearly enough seen that there are two separate, and, to some extent, conflicting, uses to which photography may be put—the record of what may be called abstract facts for scientific purposes, and the record of beautiful facts for artistic purposes, the one appealing in

* Awarded a bronze medal in a literary competition instituted by the Edinburgh Photographic Society.

greatest measure to the intellect, the other similarly to the affections; and with the recognition of these two distinct uses, all the old mechanical rules are being relaxed, nay, even abandoned, and liberty of practice is claimed and admitted in all directions—a completely satisfactory result, justifying in every case the means taken to produce it.

One of the first and most important things the photographer must learn, is that Nature does not strew her pearls broadcast. The most precious things must be keenly looked for, patiently waited for, and taken advantage of promptly. It almost seems as if we can never get a second chance to secure the finest things. The light changes, and the charm which has endured but for a few moments has gone forever. Who that has not sketched or photographed realizes how quickly the apparently inert and motionless cloud changes both its position and characteristics? One sees, for instance, a strikingly magnificent cumulus cloud, but before his apparatus is ready, the grand and unique has become poor and commonplace. Again, the most delightful scenes are the most rare. One reach of the river far surpasses all the rest. In only one nook of the forest, and in only one corner of the lake is the distinctive charm of each attained in highest perfection. The finest and most characteristic specimens of all things are rare and hard to find. We must, therefore, not expect to get the very best things every time we go forth with a camera. It is a mistake to suppose that first-rate pictures can be got by the dozen. Nature is rich, but she has not got such a number of perfect gifts to bestow as many seem to think. Yet, though we cannot get pictures so frequently as we desire, we may find subjects for pictures every day we are abroad, which are to be kept in mind, and taken advantage of in suitable conditions of light and atmosphere. To lose a day of grand clouds is a loss, indeed. It has been said that in art nothing short of the best can satisfy, therefore no pains should be spared to get perfect work. It is possible, even, to make certain small artificial improvements on the foreground of a scene which are highly important in the result, but this cannot be done without great care, for the camera is a merciless exposé of incapacity in every direction. Perhaps there is nothing in which skill is more essential than in the introduction of figures into a landscape; and not only is skill necessary, but patience as well. The cost is great, but the gain is correspondingly great. He who would extend his appreciation of all that is striking and beautiful in Nature, who would produce work instinct with the finest feeling, would do well to take assistance from the poets. In the pages of Wordsworth and Tennyson, of Longfellow and Whittier, and in many other modern poets, the most exquisite word pictures of natural scenery are to be found; and the characteristics and charms they depict so beautifully and so vividly in words are just of the kind that the photographer requires to look for and to render. Truly, there is scope in photography for the highest talent and the greatest industry.

I now wish to offer one or two practical suggestions for increasing the artistic value of photographs, but in doing so, I feel a certain diffidence, because I have not been able so completely as I could wish to

test the methods I advance. Still, the experiments I have made appear to me to be satisfactory. My suggestions may not be altogether new, but I have not noticed them in print as a means of improving negatives. They are certainly not in common use, and many photographs suffer from the defects they mean to remedy.

The chief suggestion is, that an original negative should be made technically perfect, absolutely sharp, in no part destitute of detail, or at all events of gradation, and having as nearly as possible the full range of natural light. From this primary negative a positive transparency should be made, and from that in turn a secondary printing negative is prepared, which may be either the same size, or larger or smaller than the original. The object and advantage of this apparently round-about process is to enable us to produce a negative of exactly the character required, so that in printing from it no local development, or special treatment of the prints, would be necessary. It is, no doubt, possible to modify the original negative, and it is desirable to do so as far as practicable, not by reducing or intensifying after development, but preferably by controlling the action of the developer on different parts of the plate so as to produce the desired result, but any attempt to produce a perfect negative at one operation is, for many subjects, likely to be more or less unsatisfactory. Even if one could tell in the initial stages what changes were really necessary, the extreme variations of treatment on the different parts of the plate, and the extended time of development, would be almost certain to produce markings and other defects that would go far to spoil the negative. The use of a derived negative gives three stages to get at what is wanted, and this must be an undoubted advantage in the process of modifying and harmonizing the lights and shadows, etc., and in reducing the wide scale of the original negative to the more limited scale available for a print to be viewed on an opaque surface, as of paper. The result is that the sky is brought up to the requisite pictorial strength, a due amount of lighting is given to the rest of the picture, and the exact degree of force or delicacy aimed at may be ensured. The detail and massing of light and shadow is distributed as desired, sharpness of focus and hardness of line are subdued when necessary, and the whole negative is brought to such a satisfactory state that a succession of similar prints of a particular character could be obtained from it without much, if any, individual or special treatment. It would not be desirable to follow such a course in the case of every negative; but when the subject is very good, and when there is a fine natural sky, neither time nor trouble should be spared to attain the best result. This method should be far preferable to printing in clouds from stock negatives. It has been truly said that in art nothing short of the best can satisfy.

There ought to be the greatest possible variety in the size, shape and tone of photographs. The less we speak of whole-plate, half-plate, and quarter-plate prints, of sepia, black, and purple tones, the better. It ought, perhaps, to be somewhat of a count against a picture to describe it as a half-plate silver print of a purple tone, not

because such characteristics are bad in themselves, but because they are the characteristics of such a vast number, and variety is all-important in pictorial work. The tones of photographs, especially when of moderately large size, admit of far greater variety than is commonly supposed, and that without going outside the range of colour generally considered admissible.

The scale of the picture is also a point of considerable importance. A really fine and well-balanced picture is generally improved by being enlarged to some extent if originally of one of the smaller sizes. It is not possible to lay down hard and fast lines on this point, but it is well worth consideration in each individual case.

The quality and suitability of frame is also deserving of attention. It is hardly possible that a picture can appear to be of value if the frame in which it is set speaks of cheapness, flimsiness, and poor workmanship. The most suitable tone or tones for the frame of a particular picture are, of course, best arrived at in an experimental manner.

It is desirable to say something on the subject of the criticism of photographs. It is to be feared that much of the criticism we read and hear is based on very superficial knowledge. In an hour's time, almost, the points that engage the attention of the average critic can be acquired by any one. A few empirical rules as to composition—the position of the leading object, the disposition of the principal lines, opposition of horizontal to vertical, straight line to curve, and a few superficial notions as to the production of sentiment—are too frequently the whole stock-in-trade of many who pretend to critical skill. Such a person may quite easily point out small blemishes or defects; but if he has not studied both art and nature long and patiently, he cannot discover good qualities which far outweigh the petty deficiencies he can so quickly discover. As a matter of fact, no photograph of any consequence has ever been, or ever will be, taken in which the numerous little discords of nature (if such they may be called) do not appear, and it is absurd to lay much stress on them. Besides, it must be remembered that there is a harmony that cannot be seen but only felt to exist. It is not alone the "elevation," so to speak, that must be harmonious; the "ground-plan" and every conceivable "section" of a picture must be felt to be harmonious, even when the harmony cannot be directly seen. Again, surfaces, as well as lines, must be felt to have beautiful and varied curvature, and where are the recipes and formulas that can confer keen perception and fine feeling for all the phenomena that exist in the infinite domain of nature?

If the highly skilled painter by taking advantage of the selection of materials for his picture, by the use of colour, and by the various kinds of suggestions that he can obtain from the endless methods of applying pigment, can reach heights of excellence impossible to the photographer, yet his scope is, either from necessity or choice, far more limited. It is unquestionably the case that artists, as a class, are prone to notice only those effects that have been painted over and

over again. Without presuming to make a comparison on general grounds, one cannot help feeling that at every exhibition of photographs and lantern slides, he sees a greater number of fresh and striking aspects of Nature depicted than in the average exhibition of paintings. This freshness is particularly noticed in photographs of sea and sky, which often also give such force of presentation as no painting can rival. The surface of water, Nature's own mirror and kaleidoscope, is ever changing, and ever beautiful. How vast the change from the still evening lake, whose inverted world is tremulous with myriad needles of reflected light, to the storm-tossed sea when the waves, crowned with spray and wreathed with foam, surge around the giant boulders of a rock-bound coast! Again, how vast and varied are the glories of cloudland, from peaceful flocks of sunset cloud to those majestic piles of lurid vapor where the powers of the air are imprisoned! In all these phases of natural loveliness or majesty, and in all that lie between, the camera has revealed undreamt-of visions of beauty, so rare, and so elusive, that through the centuries they had remained invisible to the painter's eye.

Let it not be supposed that pictures of those works of the Creator that we esteem beautiful are valueless because they are self-portrayed by means of the light by which our eyes see them, and that only those pictures are to be prized that present Nature as modified by someone who chooses to call himself an artist. Such an idea, common as it is, can surely not bear to be plainly stated. It should be remembered that the action of the artist is not pure gain. Indeed, in the case of inferior artists it is not seldom pure loss, for they give us either Nature as if out of a mud bath or arrayed in a gaudy meretricious garb, rarely in the modest and pleasing color which is her delight. And at the best, how often do they give us merely the complexion of Nature, despising form and almost all that speaks of vital forces. It is with strange feelings one hears such artists, as if from some sublime elevation, speaking patronizingly of photography, and in utter magnanimity, designing to be kind when they might justly be severe. But, after all, why should photographers care much whether the quality of art be or be not attributed by artists to their work. Its power to confer instruction and delight is just the same although this little word of three letters is unheard of in connection with it.

I cannot see that an earnest and successful worker in photography has any cause to feel ashamed of his choice of a pursuit. For one whose time and energies are mainly occupied in the daily work by which his livelihood is obtained, to photograph is in the great majority of cases a more honorable, because more wise, choice, than to paint from Nature. The time at the command of most amateurs is quite sufficient to gain the requisite manipulative skill, and to provide the opportunity for doing successful photographic work. But the amateur painter cannot hope to produce tolerable, far less admirable work, unless he is decidedly gifted, possessed of exclusive devotion to his work, has more than the average share of leisure, and the advantage of

some professional tuition as well—a combination of circumstances rarely to be met with.

Photography carries with it most of the advantages that other recreations possess—open air, exercise, emulation if desired, but distinctively, and in largest measure, it has an educative influence of the most delightful and varied kind, and it keeps ever fresh those reminiscences of happy days and distant scenes which might otherwise have completely faded with lapse of years from the pictured page of memory. Let the photographer be proud and glad of the extent, variety, and richness of the field of his labour, and, if he cannot, like the painter, transfigure Nature according to his individual fancy, or distort her after his caprice, let him rejoice that he is more likely to display the beauty that the Creator intended to be seen, admired, and enjoyed by all.



OZOTYPE: A NEW FORM OF PIGMENT PRINTING.

By F. C. LAMBERT.

THE following notes are gleaned from a lecture and demonstration by the originator of the process, Mr. T. Manley, before the Royal Photographic Society (London), on March 28th:

Outline of Process.—An ordinary negative is printed by daylight on a special paper, which yields a visible image not very unlike but more distinctly visible than platinotype. This print is immersed in an “acid bath,” together with a piece of ordinary unsensitized carbon tissue. The two (print and tissue) are brought together, removed, squeegeed, and hung up to dry. They are then immersed in water, the backing paper of the tissue removed, and the print developed with warm water, just like an ordinary “single transfer” carbon print.

The Printing Paper.—As to paper, we may use any kind, of good quality, such as Whatman, Arnold, etc. Or we may use a photographic paper already coated with insoluble gelatine, such as ordinary single transfer.

The Sensitizing Solution.—This essentially consists of a bichromate; *e. g.*, of potassium or ammonium, together with a soluble manganoous salt; *e. g.*, sulphate, nitrate, etc. A convenient formula is 14 parts potassium bichromate, 7 parts manganese sulphate, in 100 parts water. The solution is applied by brushing on or floating.

Printing the Paper.—This is done with an ordinary negative in direct sun or diffused daylight, according to the nature of the negative. Print until detail is seen in the highest lights. The sensitiveness is about equal to platinotype paper. The print is then washed in several changes of (cold) water until the washing water ceases to be discolored. Three or four changes usually suffice. The print is then dried.

Gelatinizing the Print.—If the sensitized paper is already coated with gelatine, this step is not needed; but if plain paper be used, the dried print is next coated with a 2 per cent. solution of soluble gelatine and again dried.



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SUNDAY MORNING.

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The Acid Bath.—This varies somewhat according to whether it is desired to accentuate or diminish the contrasts of the print. Thus: Water, 1,000 parts; glacial acetic acid, 2 to 5 parts; hydrochinone, $\frac{1}{2}$ to 2 parts. An increase of acid accentuates contrast, and increase of hydrochinone gives softness. As a good working formula, take 1,000 parts water, 3 parts acid, and 1 part hydrochinone. The piece of carbon tissue, cut to same size as print, is immersed in this bath for one minute at 65 degrees to 75 degrees Fahr. The print is then quickly immersed in the acid bath. The print and tissue are brought face to face under the solution, then removed together, laid on a flat surface, and brought into close contact with a squeegee. Their surfaces are dried by pressing between dry blotting-paper, and then hung up to dry. This takes a few hours.

Development.—The dried print and tissue in contact are immersed in cold water for half an hour. Then put in warm water 100 degrees to 105 degrees Fahr. In a few minutes the carbon backing paper may be pulled away, and the print developed in the usual manner. The finished print may be fixed by immersing it a few minutes in 1 per cent. alum solution. The *rationale* of the process seems to be somewhat as follows: Light acting on the bichromate reduces it, setting free oxygen. This oxygen combines with the manganous salt and produces a manganic salt. The acetic acid sets free again this oxygen, which then combines with the adjacent gelatine of the carbon tissue. This renders it insoluble. Thus pigmented, gelatine adheres (being insoluble) to those parts of the print acted on by light.

The Specific Advantages of the Process.—1. The print is not reversed (right and left), as in ordinary single transfer.

2. No safe edge is needed
3. The fingers are not brought in contact with the poisonous bichromate solution.
4. Blisters and troubles of the like kind do not arise.
5. Contrasts can be modified.
6. The sensitive paper keeps in condition for several months.
7. The washed print may be pigmented at any time.
8. The printing is distinctly and easily visible.

NOTES.—Ferrous sulphate may be used in place of hydrochinone. For soft effects, increase the hydrochinone and reduce the acid. For contrasty prints, increase the acid and reduce the hydrochinone.

The process has been patented.

The finished results are indistinguishable from those produced by the ordinary carbon process.

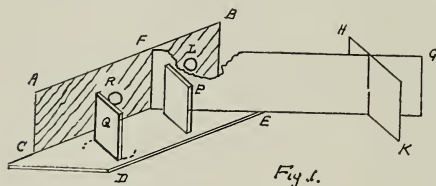


All copy for June issue must be in our hands not later than May 15th.

A NEW FORM OF STEREOSCOPE FOR SINGLE LANTERN PROJECTION.

By F. C. LAMBERT.

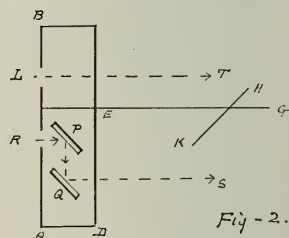
THERE are two well-known methods of producing stereoscopic effect by projection on the screen. In one case two pictures are projected and superposed on the screen by two lanterns, one through red, the other through green, glass. The spectators are provided with spectacles glazed with corresponding colored glasses. Thus one eye sees one picture, the other the other picture only. A second method is similar. Two stereo-pictures are projected by polarized light, each polarized at right angles to the other. The viewing spectacles are similar polarizers, so that each eye sees one picture only. In both cases two lanterns are required. Mr. H. J. Knight has overcome this matter in a very simple and efficient way, with the aid of a little instrument which he introduced to



the Camera Club (London) at a recent meeting. The efficiency of the apparatus may be verified by any one with a little patience, two bits of mirror glass and a few pieces of blackened card. The accompanying diagram will make the essential arrangement of the instrument easily seen.

In Fig. 1 we have a general oblique view. CDE is a rectangular piece of stout card or thin wood. $CAFB$ is a similar piece of card set at right angles to the first-named piece. FEG is again a third piece, also set at right angles to the two first-named pieces.

In $CAFB$ are made two holes R and L of about an inch diameter and just so far apart as the eyes of the user of the instrument. HK is again a piece of blackened card jointed to FEG by a half notch in each piece. P and Q are two pieces of ordinary-looking glass about 2 inches square, set parallel to each other and perpendicular to CDE . Turning now to Fig. 2 we have a ground plan of the parts which are similarly lettered. Two stereo-positives being projected on the screen, the spectator holds the instrument so that the opening L is opposite



the left eye and R opposite his right eye. The left-hand picture on the screen is seen by the left eye looking in the direction LT , the moving piece KH being adjusted just to prevent the left eye seeing the right-hand picture. Again the right eye looks into the mirror P set at 45 degrees to the line of sight, and from it into the second mirror Q which gives a reflected image of the right-hand picture on the screen, the moving piece HK again serving to prevent the right eye seeing the left picture. Again the mirror Q is set on a vertical pivot, so that it may move through a small angle for adjustment. The apparatus works perfectly. Mr. Knight has secured provisional patent protection.

TELEPHOTOGRAPHY.*

By E. J. SPITTA, M. R. C. S., L. R. C. P.

TELEPHOTOGRAPHY has not found, we think, so many advocates as it deserves. Its use is obvious when the details of a distant object are required, and where it is impossible for the photographer to obtain a site upon which he can place his camera to take a picture in the ordinary manner. We have known, for example, in Switzerland excellent views of interesting mountain slopes, or what is more fascinating still, grand glacier effects, which simply could not be photographed by any other means save, perhaps, by the use of a telescope instead of an ordinary photographic lens.

The difficulties attending telephotography are not insignificant, we allow, and we admit having expended some time in obtaining good results, for after mastering the use of the telephoto lens itself, the lengthy camera required and the stand upon which to fix it rigidly are matters requiring additional attention and consideration. It is the object, then, of this short article to lay before the readers of *Photography* methods we have found to be practical. For convenience of description we shall divide our remarks into two heads: (1) The apparatus used, and (2) the method of using it.

THE APPARATUS.

Before proceeding further we must state that, both for convenience of portage and the lessening of expense, we have found that it is the best plan to take the primary telephoto negative on a quarter-plate. The facility with which the apparatus can be carried, especially up a mountain slope or for a long walk, can easily be understood, and the results, if in the first instance the proper diaphragm has been used, when the negative is finally enlarged, are but little, if at all, inferior to those obtained by taking the negative the full size. Indeed, we will go further, for it is our opinion, although we wish it to be understood it may not be that of others more experienced, that better results are obtainable this way, as the performance of the telephoto lens is not unduly strained, and the terrible difficulty of dealing with air tremulations is much minimized, as the magnification is sensibly less.

The arrangement we adopt is to fit to an ordinary quarter-plate camera, having an extension of about 12' or 13 inches, an oblong box 12 inches long, $6\frac{1}{2}$ inches wide, and having a height of 7 inches. The upper part of this box should be made to lift up, for the purpose of making it hold both the telephoto lens as well as the focusing cloth, and the piece of wood which forms the bottom extended a sufficient length beyond the limit of the box to support the quarter-plate camera when closed. The front, which carries the lens, should have a sliding up-and-down motion, while the sides of the cut-out back should have their edges rabbetted so as to slide into the grooves of the quarter-plate camera when its rising front has been removed. A long camera is thus formed which should, without difficulty, be made light-tight and yet quite rigid. We say without difficulty, because we made our own without much trouble beyond a little careful carpentry. A variation of extension, quite sufficient in amount, is brought about by simply extending more or less the 12 or 13 inches of the quarter-plate camera itself.

With the dimensions given, the arm can just reach the focusing screw of the lens, and yet allow a distance of 10 inches from the ground-glass for the eye to view the image on the screen. It is a convenience to carry inside the box a rule, so as to ascertain the distance of the image from the negative lens of the combination, so as to enable the operator to at once measure this distance and so obtain, by the use of the tables now supplied by the makers, the equivalent focus of the arrangement, whereby he can at once estimate the value of the diaphragm used. The tables referred to should be pasted inside the lid, so as to be readily accessible to compute these quantities when in the field.

The whole apparatus packs up, quarter-plate camera, extra camera box, containing lens, rule and focusing cloth, in a leather case, which measures $6\frac{1}{2}$ inches

* *Photography*, March 23, 1899.

in length, $7\frac{1}{4}$ inches in width and $8\frac{1}{4}$ inches in height, and, if the telephoto arrangement is made in aluminium, only weighs $12\frac{3}{4}$ pounds.

With respect to the stand, it cannot be made too rigid, and we have tried several plans to increase its steadiness and portability, for, be it understood, all "shake" is as much magnified as the details of the picture we photograph. Another trouble, too, obtains, which is often lost sight of until in the field, and it is this—objects of which detail is required, especially the tops of church steeples or mountain peaks, are mostly well up above the level of the standpoint from which the photograph is taken, so the camera has to be tilted much more than would be necessary in taking an ordinary picture with a low power and short focus lens. The consequence of this is that the use of ordinary camera legs in the ordinary fashion is entirely forbidden, for one leg (or, perhaps, two of them) would have to be much higher than the others. It is obvious, then, that the slightest extra tilt causes the whole apparatus to tumble bodily over on to the operator, which, to say the least, is most embarrassing with the head under the focusing cloth. After many experiments the following simple plan of getting over the difficulty suggested itself:

A tilting table has the advantage of being simple, easy to make and inexpensive. Two boards of $\frac{3}{4}$ -inch stuff are obtained 2 feet 4 inches long and 12 inches wide. The narrow ends are joined by two stout hinges, and one board is provided with a screw hole for attachment to the triangle of the ordinary camera legs when it is placed horizontally, half-plate sized legs being preferable. An extra screw hole is placed well in front, so that, if necessary, an additional triangle and legs can be added. To the upper board, which is free to move up and down on the hinges, is attached at its hinge end a ledge to keep the telecamera from falling off. A wedge between the boards now gives the required tilt, or, better still, it is a good plan to have two brass slips, one on each side, whereby the upper board can be pushed up a little or much, just as the lanternist raises or lowers the lens end of his lantern. The arrangement shuts quite flat, is only the thickness of two boards, is not likely to get injured in transit and is not heavy to carry. Some simple means should now be provided to prevent any lateral motion of the camera on the stand. In Switzerland we usually use large stones, which help to make the whole more rigid and steady.

The lens we can strongly recommend is the aluminium-mounted 2 B patent portrait of Dallmeyer with his high-power negative attachment. The maker should be requested to fix a rim on the mount of the negative lens to enable a yellow screen to be dropped in position, as we have always found, especially with mountain peak work, contrast in the negative cannot be so well obtained without its use.

TAKING THE PHOTOGRAPH.

Before doing this on the field, some few experiments are necessary to ascertain the exact amount the posterior lens of the 2 B has to be unscrewed to give the best results. This is done on level ground, with an object placed about 100 yards off; the farther the better. It should be a well-defined one, like strips of black paper pasted on a white ground. Photographs then should be taken with one, two, three and four quarter turns of the posterior lens of the 2 B, and the results noted. The best position ascertained, it is convenient to mark the number of quarter turns (notches are provided by the makers of the lens mount itself), to facilitate this operation, on the inside of the camera lid for future reference.

In the actual taking of the photograph the following points should not be forgotten:

The day should be exceptionally fine, and the air quite free from all haze and tremulation. About eight or nine o'clock in the morning we have found the best time, and we have never taken a really good negative after eleven or twelve o'clock. There should be no wind whatever, and the legs of the camera should be planted widely apart and firmly pressed into the ground. When this is impossible—for instance, when standing on rocks—we have been obliged to place the camera on the ground, build around it with stones and lie flat on the face to take the photograph. Having then set up as rigidly as possible, the operator decides upon the magnifica-

tion required, and having focused with the largest stop of the 2B, places the light yellow screen on the negative attachment. No alteration should thereby be produced in the focus on the screen, but it is as well to look and see. Attention should be given to see light does not enter between the box and its lid, and to ensure safety the focusing cloth had better be laid over the whole. The diaphragm is then shut down to about $f/16$ on the 2B, which, with most extensions that the arrangement permits of, furnishes the best results, at least in our own apparatus. Edward's iso-medium, or snap-shot plates well backed, we have always been satisfied with, and if the light Ilford yellow screen be used the exposure is usually about twelve—fourteen seconds for the medium, and one-quarter of the time for the snap shot plates.

All the density possible should be obtained during development, for it is often more difficult to obtain dense negatives in this type of photography than with any other, the reason of which is not obvious. Extra exposure will often not do this, it will simply fog the whole plate. It is best obtained, we have mostly found, by prolonging development, adding bromide from time to time to prevent fogging. Hydrokinone is very suitable, we have found, as a developer.

In conclusion, we may state no anxiety need be felt at tilting the whole camera up in the manner suggested; no distortion effects are produced, as the angle enclosed by the picture is so exceedingly small.



WITH much sorrow we announce the death of Mrs. Samuel Newman, the wife of one of New York's prominent photographers, which occurred April 13th, after a short illness.

Mrs. Newman, by her genial and happy disposition, made many friends, who will learn of her unexpected death with sincere regret.



THOSE who attended the Convention last year, as members of the BULLETIN excursion party, will remember that the party left New York about 7.30 Sunday evening, and arrived in Jamestown at 7 Monday morning. The party last year was a large and pleasant one, and a great improvement over journeying alone. A similar arrangement will be made this year, and the BULLETIN party, it is hoped, will be a feature of the Convention, and a pleasure to all who may connect themselves with it. Full particulars will be published in the next number of the BULLETIN, and, meantime, the editor will be pleased to answer any questions that may be asked. It is to be hoped that the number of ladies attending this year will be even larger than last.



OUR ILLUSTRATIONS.

THE frontispiece and full-page illustrations in this number are from the well-known Baker Art Gallery of Columbus, O., and are capital examples of genre photography pure and simple. Each print tells its own story by pose, grouping and accessory in a manner which is unmistakable, and the technical quality of the work is fully equal to the artistic. Such examples as these should have an influence in toning up our views for convention work.

PREPARING NEGATIVES FOR PRINTING.

(Continued.)

WE lay the negative in a white dish in this solution, and when the dish can be seen tolerably distinctly through the deepest shadows, remove it, and thoroughly well wash, when it will be in a condition for intensification by any process usually approved. This plan invariably gives good results, unless the exposure has been so prolonged that reversal of the image has begun to set in, when the case may be considered hopeless. Negatives too thin from under-exposure are usually so deficient in detail that very little good can be expected from them by any treatment. Slight intensification may be resorted to and the printing conducted in a weak light in order to encourage the printing of as much detail as may exist. Much intensification of such negatives only produces the familiar soot and whitewash prints. Correctly exposed negatives, if too thin, are usually so because the development has not been continued sufficiently long. Intensification without any preliminary treatment is indicated. This want of density is frequently caused by the use of unsuitable developers, rapid plates being more prone to this fault than slow ones, which indicates that possibly the exposure is at the bottom of the trouble. Slow plates are seldom lacking in density whatever developer may be used. Too dense, somewhat under-exposed negatives are best reduced by a weak solution of iron perchloride, followed by refixing. In this operation care must be taken not to carry the change too far, as no reduction is noticeable in the perchloride solution, which reduction only becomes apparent after the action of the fixing bath; a few experiments with worthless negatives should be made previously as a guide. The process can be repeated time after time if the reduction is insufficient. Small patches of density may sometimes be conveniently reduced by mixing a little gum with the reducing solutions and applying with a camel's-hair pencil; the gum is added to prevent the solution spreading; of course, well washing afterwards. Too dense over-exposed negatives are best reduced with potassium ferricyanide and thiosulphite of soda solution, and, if only a slight reduction is required, a dilute solution of hydrochloric acid will frequently be found sufficient for the purpose. Over-developed negatives can be reduced in a similar manner.

We will now consider the way clear for local treatment of a physical character. In dealing with a too thin image, there is no more effective and elegant way than the powder process, by means of which the whole or any portion of a negative can be altered in density at the discretion of the worker, and altered or cleaned off without the slightest detriment to the negative. This plan was advocated years ago by Mr. J. Werge, who specially recommended it as a means of adding backgrounds to portraits. The *modus operandi* is as follows: The back of the negative being very carefully cleaned from any adhering bits of film or any dirt that might obstruct the light, and polished with whiting and spirit of wine, and finally with a soft cloth or wash leather, a solution consisting of bichromatized dextrine is made as follows:

Dextrine	60 grains.
Sugar candy.....	60 “
Hot water (filtered).....	2 ounces.
Ammonium bichromate.....	30 grains.
Water.....	2 ounces.

Filter and mix.

This solution is poured on the back of the plate like collodion, once or twice, as the case may be, drained off, and the plate dried by artificial heat in the darkroom by a spirit lamp or hot water plates, until the coating is quite hard and bright; the negative is then laid face up on a board covered with black velvet or cloth, and exposed to the light for a minute or two; it is then laid on a retouching desk and fine plumbago brushed over the coated surface, when it will be found that the pigment will attach itself to it in proportion as the light has acted on it, the least in those parts most ex-

posed to the light, thus forming a negative on the back of the original that may be made of any density at will by more or less brushing with plumbago; if the first try is unsuccessful, it can be rubbed off, and the process repeated. The whole can be done in a luminous yellow light. After completion, expose to the sunlight until the film is equally hard and bright all over. If the color of the bichromate seems too yellow, merely pouring a little warm water over it will render it quite colorless without injuring the image. If a background is required to be added to a negative, the negative must be nicely varnished, as the coating has to be applied to the face instead of the back. A little dry whiting rubbed with a pad of cotton-wool on the varnish will permit the solution to flow equally. The negative image to be introduced is then printed on it in a pressure frame in the usual manner, and developed with plumbago to match in density with the negative to which it has been added. The whole process is so much under control that many modifications may suggest themselves.

A negative may be otherwise good, but thinner at one part than another, a fault common enough in the early days of gelatino-bromide plates with hand coating, but seldom met with now, at any rate from irregular coating. We remedy this by rubbing fine black lead, with the finger tips, over the thin parts, so that the density is equalized; this is, of course, done before varnishing, as all negatives should be, if worth retaining. Masses of shadow may be somewhat lightened and improved in the same way, or any other parts where a little extra density would be an improvement. Bear in mind, this sort of thing must not be overdone, or the remedy will be worse than the disease; but, judiciously applied, it is a very useful and easy method of adding a little brilliancy, irrespective of detail.

A too thin negative, without any detail in the shadows, had better be consigned to the dustbin, for no known process will make a decent printing negative of it. If there is a little shadow detail, slight intensification may improve it, but we must look to the printer to make the best of it by printing in a weak light through pale yellow glass, or by coating the back of the negative with yellow varnish. A little iodine added to the ordinary negative varnish will answer the purpose.

We now come to the treatment of local faults and shortcomings. The first to engage our attention are pinholes, spots and abrasions of the film. With a little Indian ink and a fine sable brush (some operators prefer indigo blue or other colors; for my own part, I prefer a semi-transparent color that will match up fairly well with the image, and Indian ink supplies this), a pinhole is lightly touched in the center as nearly as may be, and, provided the color is of the proper fluidity, the fault will quite disappear, care being taken not to get the pigment on the edges of the fault, or, instead of a black speck on the print, there will be a much more conspicuous white one. Larger spots are got rid of by a series of fine dots, until they are stippled up to match the surrounding film. When a piece of film is bodily removed, the stippling on the face may be supplemented by an even wash of color on the back of the negative. The larger the fault, the more trouble and skill is required to remedy it. If it occurs on any important part of the subject, added to the stippling should be a little skill in drawing, so that the missing part of the subject is filled in a manner that the hiatus is unnoticeable. It is curious what large gaps may, with a little practice, be filled up, and attract no attention when printed. It may also be remembered that small holes in the film appear much larger than they really are, and give a false idea of the amount of color that is needed to fill them up. An almost microscopic dot of pigment will stop an apparently large pinhole. My advice to all engaged in this work is to under rather than overdo it. Having got rid of the holes, pin and otherwise, we proceed to do so with the opaque spots. Being provided with a sharp knife and needle, the larger spots must be scraped carefully down, without cutting through the film, and objectionable points of light, in masses of shadow or elsewhere, picked out with the needle point. Faults that occur in the sky portion of the negative are often best remedied by painting out the sky altogether, so that it prints white, afterwards printing in clouds. Clouds can be painted on the back of some negatives, and, by making their contour hide the blemishes, will, in many cases, be found a very satisfactory plan.

AMMONIA PERSULPHATE, ITS PROPERTIES AND MANIFOLD APPLICATIONS IN PHOTOGRAPHY.

(Continued from page 113.)

IF a very small quantity of a solution of nitrate of silver is put into a solution of ammonia persulphate, no reduction will take place. By continued addition, however, a moment will come when the reaction does occur. It is therefore proven that a strong excess of ammonia persulphate prevents the reaction. The reaction is in every case an incomplete one, but will take place so much quicker and more completely, the larger the excess of nitrate of silver is. Namias tried to analyze the precipitate to determine the quantity of sulphuric acid and metallic silver which it contains. However, during washing, upon the filter, sulphate of silver passes into the water, so that we finally have another compound, as in the beginning. The supposition is, that the composition of the compound will differ with the change of conditions under which the precipitation takes place. According to circumstances, a compound more or less rich in silver can be obtained.

7. Whatever composition the compound may have, it is certain that the explanation which Lumière and Seyewetz give for the action of the persulphate, based upon the formation of metallic silver, becomes futile. They are of the opinion that in the interior of the picture-film a soluble silver salt originates by action of the persulphate upon the silver, which diffuses in the solution, while upon the surface the originating silver salt is at once reduced to silver again, in consequence of the excess of persulphate. The tendency to this latter reversed reaction necessarily limits the first reaction. Namias now calls attention to the fact that the presence of a stronger excess of persulphate will result in the solution of the chlor. salt, which can form only in small quantities on the surface of the picture-film, as the persulphate in strong excess has no lasting action upon a very small quantity of silver salts. We have to presume, therefore, that the persulphate can penetrate only in extremely small quantities into the picture-film, or, when penetration has taken place, that reduction would follow to the fullest possible extent. This would explain in every case that there cannot be upon the surface of the picture-film a great excess of persulphate. The writer believes that one of the causes to which is owing the small action of the persulphate upon the surface of the picture-film might perhaps be looked for in the settling of hyposulphate of silver upon the silver particles of the surface of the picture-film and enclosing the same, thus preserving it from further change. In the interior of the picture-film, however, where the excess of ammonia persulphate necessary for the decomposition of the silver sulphate forming in the beginning is not present, the reaction can take place easily. There always remains in the interior of the picture-film a small quantity of silver salt, which should be eliminated by a bath of sulphite of soda. The bath makes harmless the remaining persulphate, which would otherwise continue to act.

8. Besides a neutral solution of ammonia persulphate, Namias has also investigated the properties of a solution made alkalic by an addition of a little ammonia. Such a solution acts upon the picture-film very slowly, and requires an hour or more to obtain the effect which the neutral solution achieves in a few minutes. If an alkalic ammonia persulphate solution is mixed with a nitrate of silver solution, no reduction of the silver will take place, even after a long time, and the mixture remains clear, even after several hours. Still, the same will exercise a weakening action upon the picture-film, which is fully analogous to that of the ammonia persulphate, aside from the duration of time being a longer one. While the appearance mentioned demonstrates the futility of the explanation given by Lumière and Seyewetz, it leads also to the conclusion, that the investigations about the reduced weakening action at the surface of the picture-film (settling of hyposulphate of silver) mentioned by the writer, cannot be the only and principal one.

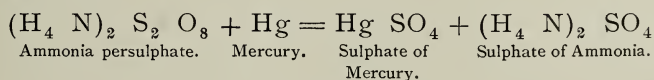
9. Besides its application as reducer, the ammonia persulphate may find other not less important employment in photography.

It is doubtless the best medium to remove a yellow fog of the negative, no matter where the same may come from, and is considerably more effective than the much-recommended sulpho-uric acid.

The ammonia persulphate acts quickly upon the wet, just-finished negative, as well as upon old and dry negatives. A 1 per cent.—at the most 2 per cent.—solution is used, and this is left to act until the disappearance of the yellow fog (five to fifteen minutes). The negative is then put into a 5 per cent. solution of sulphite of soda and washed. The persulphate decomposes and discolours the substance which formed the yellow fog, and passes the silver contained in the same into sulphate of silver. Obnoxious yellow fog and yellow spots in the negative must be subjected to a prolonged action of the persulphate, even if in a weaker solution and at the expense of reducing the negative.

If a persulphate solution made alkalic with ammonia is applied, that reduction will not take place during the time of action necessary for the removal of the fog.

10. The ammonia persulphate can also be used for reducing negatives which had been intensified with bichloride of mercury, when all the other means, as, for instance, cyanide of potassium, would not offer sufficient security. Particularly suitable for this are negatives which, after treatment with mercury, were blackened with sulphite of soda. In this case the picture consists partly of metallic mercury, which is transformed by the persulphate into sulphate of mercury after the equation formula:



(To be continued.)

Translated by

HENRY DIETRICH.

PHOTOGRAPHY, WITH MINERAL COLORS, UPON PORCELAIN AND GLASS.

From *Photographische Chronik*.

FOR the success of such photographic pictures, it is necessary that the materials used should be of best quality. The operating room has to be free from dust, and should face the north side, if possible. If the latter is not the case, all the windows must be covered with ruby fabric. The first thing to be done is, to make a photographic transparency. Shadows must be very strong, high lights sharp. Materials required are: Five to six good glass plates without any defect, and of same size as the transparency; a small photometer, a printing frame, a glass funnel, alcohol lamp, thermometer, a tin drying stove, and tin box fitting upon the same, and a large dish for the borax bath. About eleven hours before work is commenced, the following solution is prepared:

SOLUTION I.

Gum arabic.....	3.5 grams.
Pure honey.....	2 “
Glycerine.....	6 drops.
Pure spirits.....	15 cubic centimeters.
Distilled water.....	200 “ “

It is advisable to filter the solution, avoiding bubbles. A borax bath is then prepared of 8 liters filtered water and 300 to 350 grams of borax.

SOLUTION II CONSISTS OF:

Bichromate of ammonia, C. P.....	4 to 4.5 grams.
Bichromate of potassium.....	I “
Distilled water.....	125 to 150 cubic centimeters.

The following leather collodion is then prepared:

Alcohol.....	500 grams.
Ether.....	500 “
Soluble cotton.....	4 “
Castor oil.....	1½ to 2 “

The plates are cleaned with the following mixture:

Ammonia water.....	100 cubic centimeters.
Glycerine.....	70 grams.

The borax bath is prepared as follows:

Filter about 2 liters of borax water and add 7 grams of caustic soda. Solutions I and II are mixed in equal parts and filtered, the glass plates are flowed with the same, and dried in the stove at a heat of 35 degrees R. The diapositive or transparency is likewise heated, both plates are put into the printing frame, film to film, and printed. Printing must be continued until the number 8 can be distinctly seen in the photometer. The print is again heated, and the mineral color is distributed upon the same with a brush. The superfluous color is removed, the picture is coated with above leather collodion, cut with a sharp knife, and put in water for twenty-five minutes. The stripped film is put into the borax bath, and likewise the article to be decorated. The latter has to dry slowly with the film on it, and after drying is flowed with rectified spirits of turpentine, when it is ready for burning.

Translated by

HENRY DIETRICH.



PROCESS NOTES.

BY F. C. LAMBERT.

PHOTOGRAVURE.—At a recent meeting of the R. P. S. (London)

Colonel Waterhouse showed a curious and interesting specimen of reversed photogravure, which had been sent to him from the Indian Survey Office at Calcutta by Mr. Turner. The carbon resist was laid on the metal, developed and dried with spirit in the usual way, the weather being very dry. When the 44-degree Baumé perchloride was applied to the plate no action took place for some minutes, when, strange to say, etching suddenly began under the densest part of the resist, *i. e.*, the high light of the picture, resulting, of course, in a plate giving a negative instead of a positive print. (Prints were shown.) A few days later another plate, under exactly the same conditions, except that the atmosphere was not so dry, behaved in the customary manner, and gave a satisfactory positive print. (Examples shown.) The proffered explanation of this process freak is that the air, being so abnormally dry, extracted all the water from the thinnest layers of gelatine resist, but that some moisture was left in the thicker parts, and hence the perchloride was able to find its way through the thicker portions first. It would be interesting to hear of any example at all similar to this one. The case, also, is suggestive because if one could always secure complete reversal of the etching one might then save a step and print the resist from a negative direct.

Automatic Adjustment of Distance between the Half-Tone Screen and Plate.—Mr. Gamble dealt with this problem—which is ever with us—in a thoughtful and practical manner. Taking for his text the thesis that under a given set of conditions the distance between screen and plate should vary in strict proportion to the distance between screen and lens. With a view to simplifying this part of the question he showed a form of pantograph which would at a glance perform the needful calculations for one. This we easily explain by means of the accompanying diagram. The thick lines, AB , BE , represent two narrow, thin strips of wood of equal length. They are joined at B by a pin-pivot passing through both of them. The ends A and E are

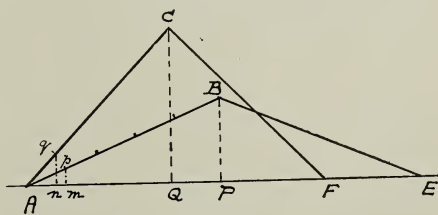
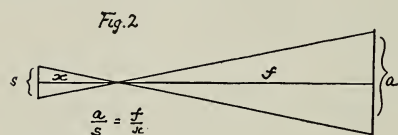


Fig 1.

pierced to receive a marking needle. A, Q, P, F, E , etc., is the base line. Now, suppose A to be a fixed point, and the needle at E to move up to F . Then AB now takes the position AC , and EB has moved to the position FC . If from B and C we drop perpendiculars BP, CQ , on the base line P will, of course, be midway between A and E , likewise Q is midway between A and F . In other words, the foot of the perpendicular is always midway between the needles. Again, if we divide AB into any number of equal parts, say five, of which p is the first, counting from A , and from p drop a perpendicular, pm , on the base line, then, of course, Am will be one-fifth of AP , or one-tenth of AE .



Also, when AB takes the position of AC , p is now at q and the foot n of the perpendicular qn . Then An is one-fifth of AQ , or one-tenth of AF , and, of course, the distance mn is

one-tenth EF . In the same way, if AB be divided into fifty instead of five equal parts, then Am would be one-hundredth part of AE . By way of illustration we may suppose that the screen to plate distance should always be one hundredth of the screen to lens distance. Thus, by this instrument, if we make AE the screen-lens distance the screen-plate distance would be Am . There are, however, two other items or factors which must be taken into account, viz., the screen opening (distance between the lines), and the aperture of the stop. Denoting by s the screen opening, by a the stop diameter, by f the lens to screen distance, and x the required distance between screen and plate, we may express their relation as a proportion: a is to s as f is to x , the required quantity; or we may put it in the form of an equation, thus:

$$x = f \times \frac{s}{a}$$

Mr. Gamble, by way of example, takes an imaginary case of a 100-line screen giving a $\frac{1}{200}$ opening between the lines. The diameter of stop is $\frac{1}{2}$ inch, and the screen lens distance 20 inches. Required, the screen plate distance. Then the formula: $x = \frac{f \times s}{a}$ (becomes by substituting the supposed values) $= \frac{20 \times \frac{1}{200}}{\frac{1}{2}} = \frac{1}{5}$ inch.

In this case the proportion of screen-plate distance to screen-lens distance is $\frac{1}{5}$ to 20, or 1 to 100.

Mr. Gamble discussed various methods of mechanically making the movement of the screen bear a constant relationship to that of the lens, and, with the aid of models, pointed out the difficulties and advantages of each. On the whole, he seemed to favor the plan of solving the problem of the familiar differential screw, whereby for every 1 inch the lens to screen distance is increased or diminished, the lens to plate

[NOTE.—As an aid to the worker's memory we may point out to him that this formula is easily remembered if he can keep in his mind's eye (Fig 2). For the two triangles, having their vertices conterminous, are obviously similar. Hence the base a is to altitude f as base s to altitude x .]

[NOTE.—A glance at the formula: $x = f \times \frac{s}{a}$ shows us that if $\frac{s}{a}$ be a constant (i. e., the same stop, be always used for the same screen), then x will always be a constant proportion of f .]

distance is at the same time increased or diminished one-hundredth part of an inch. In the opinion of several experts in process matters, it was fully agreed that a camera automatically making this adjustment would in a few weeks more then repay its cost in the saving of labor.

Three-Color Printing.—At the recent meeting of the R. P. S. (London), Captain Abney discussed the most recent aspects of three-color printing, and illustrated his lecture by numerous experiments, showing some new color-sensation curves, according to some quite recent revision experiments. These show that all three sensations are stimulated more or less by a much larger range of the spectrum than was usually supposed, the red sensation responding more or less to nearly every part of the spectrum. He also showed colored papers corresponding very closely with the especial color sensations of the eye. These are, practically: Vermilion, to which is added a very little blue to neutralize its slight excess of yellow; emerald green, which is fairly correct, and real ultramarine. For the red sensation, the color is a little below the C line. For the green, take about one-tenth the distance between E and F, and for the blue we may take the blue lithium line.

He discussed at length the true printing colors, which should be the true complementaries of the three negatives, and said at present the chief defect lay with the ink-maker, who did not give us true colored inks for the purpose. The yellows are the best, and are fairly correct; but the pinks are not blue enough, and blue has not enough green.

The only plate that at present reproduces the entire spectrum is an ordinary unorthochromatized one. The exposures for the blue, green and red are as the numbers 1, 8 and 100.



THE Camera Club of the Y. M. C. A. of Newburyport has just been organized under the name of the Pike Camera Club. The officers for the present year are: President, Rev. H. A. Cornell; Vice-President, Charles Howe; Treasurer, Byron Sargent.

THE annual meeting of the California Camera Club was held on the 4th of April, on which occasion the following officers were elected: President, J. W. Erwin; First Vice-President, E. J. Dollard; Second Vice-President, W. B. Webster; Secretary, H. B. Hosmer; Treasurer, D. E. J. Eisen. The reports showed that one hundred and fifty new members had been added to the roll during the past year, and that

\$4,000 had been expended in equipping the art department and gallery with the best modern appliances. This club is now probably the most successful and largest, as well as the most thoroughly equipped, organization of its kind in the country.

THE eleventh annual exhibition of the Providence Camera Club was held in the latter part of March, and was successful in every way. About eleven hundred pictures and transparencies were shown, which covered almost all departments of photography, including radiographs and prints from wet plate negatives.

THE Grand Rapids Camera Club is in a very flourishing condition, and is planning several excursions and two exhibitions for the coming year, the first of which will be held in June. The officers are: President, Leo A. Caro; Vice-President, Mrs. F. A. Wilson; Secretary, Charles Reeves; Treasurer, J. C. Parker.

A NEW camera club has just been formed under the name of the Corydon Camera Club of Corydon, Ind., under the following officers: Captain, Hugh O'Connor; Vice-Captain, S. D. Bartley; Secretary, Miss Clem Mathes; Treasurer, John Trotter.

THE following officers were elected in the St. Paul Camera Association for the present year: William C. Johnson, President; B. J. Shepard, Vice-President; C. A. Mathes, Secretary and Treasurer.

THE annual print exhibition of the Plainfield Camera Club was opened on the 10th of April under very successful auspices.

THE annual meeting of the Y. M. C. A. Camera Club of Providence was held on April 10th, the following officers being elected: President, C. Abbott Davis; Vice-President, C. W. Young; Secretary, C. B. F. Davis; Treasurer, H. L. Calder.

AT the annual meeting of the Orange Camera Club the following officers were elected: President, F. H. Gould; Vice-President, D. S. Plumb; Treasurer, E. S. Butterfield; Secretary, W. H. Mason.

THE officers of the Albany Camera Club are: President, Charles V. Winne; Vice-President, Robert S. Oliver; Secretary, Charles L. Palmer; Treasurer, T. L. Carroll.

AT the seventh annual meeting of the Lowell Camera Club the following officers were elected: President, Paul Butler; Vice-President, W. P. Atwood; Treasurer, F. H. Martin; Secretary, George A. Nelson.

THE Photographic Club of Baltimore has just elected the following officers: President, Dr. Frank Slothower; Vice-President, Percy M. Reese; Treasurer, E. M. Baker; Secretary, J. P. Bigham.

A VERY successful exhibit has just been held by the Mobile Camera Club, on which occasion between two and three hundred pictures were displayed. This is the first exhibit given by the Club, and was confined wholly to the work of its members.

THE Irvington Camera Club of Newark, N. J., has elected the following officers : President, Charles W. Harrison ; Vice-President, Frank H. Morrell ; Secretary, Ross W. Foster ; Treasurer, George H. Woolley.

THE exhibition of Photographic Section of the Hartford Scientific Society has just closed, and though the number of prints exhibited was less than in some previous years, the general quality of the work was very high. Prizes were awarded in several divisions, and interest in the work of the Club was very pronounced.

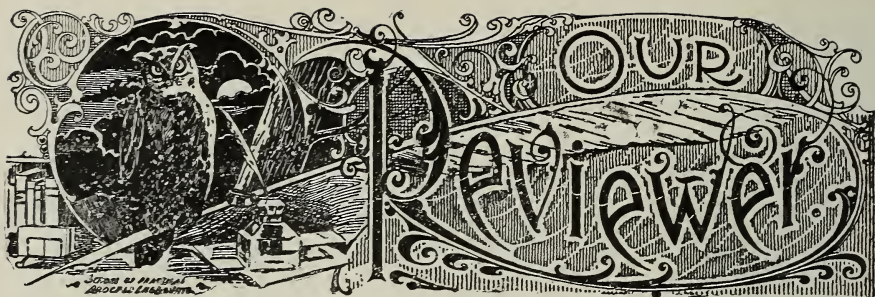
THE Boston Camera Club has just held its annual exhibition, on which occasion one hundred and sixty-two photographs were shown. The quality of the work exhibited was very high, and the award for the most artistic exhibit was given to Miss Emma Fitz, whose work has created a great deal of favorable comment wherever displayed. The award for the best landscape went to Joseph Loud, and for the best portrait to Percy Brown, both members of the Club.

THE Y. M. C. A. Camera Club of Jersey City has just been formed, with J. Mills Dilloway, President, and R. Anderson, Treasurer.

A VERY successful exhibit has just been held by the Minneapolis Camera Club. This exhibit, while it is the first given by the club, is one of which it may be proud, and will go far towards establishing a record which will be of value as the Club grows older.

THE regular lantern slide exhibition of the Swarthmore College Club was held last month. About one hundred and fifty slides were shown, many of which proved of special interest to the audience, being scenes near the college. Almost all were made by members of the Club.

AT the quarterly meeting of the East Orange Cyclers, held at the Club House on April 14th, an amendment to the constitution was adopted changing the name to the East Orange Camera Club. The Club House is now fitted up with a large and convenient darkroom, washing tubs, work tables, etc. An enlarging and reducing camera has been purchased, and the Club is about to purchase a lantern for the exhibition of lantern slides. The purchase of other suitable apparatus is contemplated. Applications for membership from those interested in photography will be welcomed, and information may be obtained at the club house or from the officers of the Club : D. L. Gorsline, President ; W. H. Mason, Vice-President ; W. H. Craig, Secretary, and C. K. Foiles, Treasurer.



"A TREATISE ON PHOTOGRAPHIC OPTICS," by R. S. Cole, M.A., published by D. Van Nostrand Company, of New York, is before us for review. This is a volume just from the press, containing 325 pages, covering the subject of photographic optics in a very comprehensive form, and treating of light, the elementary theory of lens aberration, its correction and the design of lenses, lens testing, exposure, speed of shutters, enlargement, reduction, depth of focus and halation. The volume is copiously illustrated, and presents the subject of optics as applied to photography in a form which is of scientific value, while not of too abstruse a nature to place it beyond the reach of all with a slight knowledge of mathematics and physics. It is carefully indexed in such a manner that subjects and topics may readily be found. This is a volume which cannot but be of value in any photographic library. The publishing price is \$2.50.

THE first number of the *Photo Miniature*, appearing under date of April, is from the new firm of Tennant & Ward, and is a very dainty brochure, devoted entirely to modern lenses, and the subject-matter is a very careful compilation in extremely terse form of lens lore in general. We understand that the *Miniature* is to be published monthly and that each number is to contain a complete article on some one adjunct of photography. The price of the *Miniature* is 25 cents a copy, or \$2.50 per year, and its editor, Mr. Tennant, is to be complimented upon his initial number.

A VERY complete booklet on patent developers has just been published by the photographic department of the Actien Gesellschaft für Anilin Fabrikation of Berlin, and consists of a brief description accompanied by formulas for the use of

the various developers produced by this firm. This book may be had on application to our publishers.

THE AMATEUR POINTER is a recent publication from the publishers of the BULLETIN, intended to cater to the wants of the amateur and beginner in photography. It deals with photographic manipulations and matters generally in a plain and elementary manner, and is intended to start the beginner in such a way that he may reach the proficiency of an amateur. It is published monthly at 50 cents per year.

NUMBER 2 of *The Journal of the Photographic Society of Philadelphia* for February is at hand and contains the proceedings of the Society, together with a paper on Persulphate of Ammonia, read before the Technical Committee by Caspar W. Miller; another, by J. Horace McFarland, on Backgrounds, Mounts and Frames, with various notes and items of interest to the Club members and photographers in general. It is an encouraging sign that the larger clubs are publishing official organs of this kind by means of which interest is stimulated and encouraged.

ARCHIV FÜR WISSENSCHAFTLICHE PHOTOGRAPHIE (Journal for Scientific Photography) is the title of a new photographic journal, edited by Dr. Eugen English in Stuttgart, and published by the well-known firm of Wilhelm Knapp, Halle a/S. It is to appear in twelve yearly numbers, and, as the title says, will be devoted specially to scientific photography. Among the contributors we notice the names of Prof. E. Valenta, R. E. Liesegang and Baron E. Hübl and others, which speaks well for the new publication.

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PHOTOGRAPH BY E. E. MOORE.

THE BUTTERFLY.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

JUNE, 1899.

No. 6.

THE COMING CONVENTION.

AS Convention time approaches, a good many photographers who have been doubtful about attending are beginning to wish they had made up their minds earlier to go and had prepared something in the way of an exhibit.

It is coming to be known to them, perhaps, that a competitor, a new comer, who has heretofore not attracted particular attention, has decided to enter some pictures in a certain class, and an unexplainable feeling of uneasiness and disappointment, almost unconsciously, makes itself felt. They do not, for a moment, admit, even to themselves, that "the other man" will stand any show of being awarded a prize; but their pride will have been touched that their town or locality is to be represented by Mr. So and So, while they have always looked upon their own work as being more representative, and have desired to be identified with all of progress and improvement in their locality. Wherever such a state of things exists, however, it is safe to assume that the new man needs watching if the old one would make good his claim to superiority.

Because we were, last year, "the leading photographer," it does not at all follow that we shall be next year; in fact, there is an ever-present element of defeat in success itself, and the man who attains to the highest success, and rests satisfied with his achievement, is bound to see some more humble worker gradually gaining on him, and, finally, leaving him behind. The only way to remain successful is by constantly striving for greater proficiency, and no better way of obtaining greater proficiency can be found than by attendance at convention, where the best work of those who, at least, believe themselves proficient, is to be studied. The widely different lines of work pursued by the best men will be suggestive of improvement in our own work. The school of photography, with its practical demonstrations, will set us right in matters of manipulation; the personal touch with fellow-workers from various parts of the country will stimulate enthusiasm and create new ideas; the rest and recreation of a week will

strengthen us bodily and refresh our minds, while the lectures and public criticisms of work exhibited will show us "what not to do and how not to do it." Photography is rapidly advancing, and each year takes a higher place in the economy of the world. Those who, in the past, have "set the pace," are the deep students who avail themselves of every opportunity presented to do something better than has been done before; who are constantly adding to their own ability by absorbing the best from the work of others, and who, thus broadening their experience in all directions, are better fitted to perform their work to the satisfaction of their customers and their own profit.

The Convention at Celeron will prove of great value to any photographer attending with the desire to increase his business. Remember the dates—July 17th–22d.

OBITUARY.

GRACE MARIE MORA.

"ONE touch of Nature makes the whole world kin" is a truism never more keenly appreciated in our busy life, perhaps, than where that touch is from the hand of death, and the sympathy of a large number of people has gone out to Mr. Samuel H. Mora and his three children in their recent bereavement.

Mrs. Mora died at the family residence in Rochester, April 1st, from which place she was buried on the 4th, the funeral services being attended by a large number of personal friends of the deceased and many of those associated with Mr. Mora in the office and works of the Eastman Kodak Company, with which he has been long identified. The BULLETIN extends its deepest sympathy to the remaining members of the family.

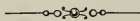


WE note with regret the death of Mr. Richard Walzl, the well-known photographer and dealer, of Baltimore, Md., who passed away at his country home on May 10th.

Mr. Walzl had not been well since an attack of the grip, from which he suffered last winter, and a few days before his death was stricken with paralysis. Mr. Walzl is survived by a widow, two sons and a daughter, and his loss will be keenly felt by a large circle of business and personal friends.



MR. GEORGE W. DRYER, one of the oldest photographers of Indianapolis, died very suddenly in his studio early in April last. He was a veteran of the Civil War, having gone to the front in response to President Lincoln's call for troops. Mr. Dryer was a Scottish Rite Mason, and was especially well known among the Masonic fraternity. A widow and one child survive him.



WE note, also, the death, on May 9th, of W. P. Wheeland, the oldest photographer in Milton, Pa., who died at the advanced age of seventy-four years. He was a prominent Odd Fellow, and at one time Postmaster of the town.

Items of Interest

MESSRS. KIMBALL & MATTHEWS, who have long been established in Columbus, O., and who are favorably known to the photographic fraternity of this country, have lately leased large and beautiful new quarters at 228 and 230 North High street, in their city, where they will be glad to welcome their old customers and form the acquaintance of new ones.

The BULLETIN offers its congratulations on this evidence of increasing prosperity, which is so well deserved.

THE tenth annual convention of the Nebraska Photographers' Association is to take place in Omaha, Neb., July 26th, 27th and 28th. Special prizes are offered for professional work in a large number of classes. Full particulars may be obtained by addressing the Secretary, W. P. Fritz, Fremont, Neb.

THE accompanying reproduction is photographed from an original miniature in oil on ivory, of Mrs. Mundy of Newtonville, Mass., who is now in her eighty-first year, and the most interesting thing about it to photographers is, that the original was painted by a sister of Daguerre sixty-one years ago. The cost of the miniature is said to have been £30 sterling or about \$150.

The BULLETIN is indebted to Mr. E. E. Moore for the above facts and for the photograph reproduced here.



THE recent exhibition at the rooms of The Camera Club of Mr. Alfred Stieglitz's photographs may be said to mark a new stage in the progress of artistic photography in this country, and is noteworthy chiefly, perhaps, for its strong impress of individuality. Mr. Stieglitz brings into play his keen perception of artistic composition and lighting, compelling his lens and subsequent manipulations of plate and printing media to

accomplish results in a manner seldom seen before. The catalogue of the exhibition, prepared by Mr. Joseph T. Keiley, is a beautiful specimen of the printer's art, and constitutes a fitting tribute to Mr. Stieglitz's work for the elevation of pictorial photography. Mr. Keiley says in part :

"The splendid vista that to-day opens up to the camera was fifteen years ago almost if not entirely veiled by the mists that ever obscure the hour of dawn—for pictorial photography was then in its orient. An offspring of science, it developed under the tutelage of the scientists, who, as a class, have never been remarkable for their artistic inspiration or aspirations. With several notable exceptions, these men were not broad enough to perceive its nobler possibilities and simply regarded the camera as a clever copyist. The idea that it could be used to give expression to one's individuality and taste they ridiculed unmercifully and opposed with bitterness; while public opinion—ever ready to condemn that about which it knows nothing—assailed it with that fierceness that is born of ignorance and prejudice. Yet despite all this, pictorial photography has already won for itself in the world of art so important a position, and has advanced with such unswerving progression toward better things, that a study of the manner and course of its development promises to be both instructive and entertaining. To the student of pictorial photography such a study of the subject is as invaluable on the one hand as the opportunity to pursue it is rare on the other, for it does not often happen that the professional career of one man will be co-extensive with the life of that art or calling to which he may have devoted himself, or that his work will reflect more than a fraction of the evolution that is going on in the world of which he forms a part."

This collection was of particular interest, too, from the fact that it included many prints in experimental stages, some of which were made thirteen or fourteen years ago, and which served to show the gradual evolution of ideas and proficiency.



WE quote a few passages from a recent address by Pirie Macdonald, which are full of good things :

"Photography is recognized as a medium wherewith an artist may express himself, and not merely a mechanic's tool.

"Men with talent—men prepared to spend their lives in photography, because they believe that there is a work to be done that is worthy of their devotion and their enthusiasm, and that there is sufficient opportunity for artistic growth to warrant the expenditure of their best efforts, devotion and enthusiasm—are attracted by photography.

"The younger generation are not artisans. They are students of art, students of men and women, students of character as well as men who can make pleasing combinations of line and texture. Not makers of maps of faces, showing the location of a nose or a mouth, as related to a pair of eyes. Not men content to picture an empty shell, but

rather to show the strength and power and the justice and truth and manliness of a man—and the grace and purity and sweetness and womanliness of a woman.

“Dyspeptics and people with refractory livers say flatterers. Those who recognize the seriousness of the work say discoverers of the beautiful—beauty of line and beauty of spirit.

“The wart on a man’s nose is of no more consequence than the wart of bad temper that his character wears, and they are equally to be evaded. The purity of a woman’s mind has as much right to be selected for a place in the portrait as the purity of her profile.

“There is no more necessity for the perpetuation of a bad trait than for that of a bad feature—if there is a good one to take its place.

“Pictures of people are made for the purpose of stimulating the memory, and is it not better to remember that which was good in your friends, that which was strong and noble, that which you have admired and loved in them, rather than what you have had to condone?

“* * * The photography of to-day is a medium wherewith men who think can express themselves. Not a process which casts every man into one mold, but one with which infinite variety can be obtained. One sufficiently in hand so that the personal equation of the individual can be felt and recorded.

“It is natural to remark that no two men have made pictures that are in any way alike, and I want that fact to prove my argument.

“Each man has shown you what he thinks and feels is beautiful.

“Each man shows the influence of his heredity and his training in what he thinks is beauty. And I am here to-night with the one contention that photography does permit of individual artistic expression—does give into the hands of the artist the power to express what he thinks seriously and honestly in the combination of truth and beauty.

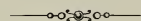
“A point that our friend, the portrait-painter, has never admitted, but that I believe to be true.”



THE Photo Club of Paris announces that, as it has been unable to secure the gallery at Champs Elysées as usual, there will be no exhibition this year.



A SUIT for \$10,000 damages has lately been decided against the old City of Brooklyn, on the ground that the city was responsible for the existence of a large show case filled with photographers’ exhibits, which fell from the second story of a building and caused serious injury to the plaintiff. The original suit was for \$30,000, and was decided in favor of the city, but, on appeal, a new trial was ordered, which resulted in a verdict against the city for \$10,000.



THE interior of George H. Guardineer’s photographic stockhouse in Albany was badly damaged by fire on the night of April 28th. It is reported that the damage is wholly covered by insurance.

A PLEASING RECOGNITION.

MR. ROCKWOOD, of the Holland Building, received a marked honor from his friends and employes last Thursday to commemorate his recovery from a severe illness as well as to mark the fortieth milestone in a life of business activity. An immense horseshoe of rare orchids was presented to him, and congratulatory addresses delivered. A noteworthy fact in the entertainment that followed was the presence of two employes who had been in the service for thirty-seven years.

IN connection with the above paragraph the subjoined letter from Mr. Rockwood to our publishers will be of interest. They desire, however, to correct Mr. Rockwood's impression regarding the present connection with the house of E. & H. T. Anthony & Company, of any whose continuous term of service dates back as far as forty years, as Mr. William Walden, their old and faithful porter, who is at present on the pension roll, and Mr. Peter Murphy, who is still in active service with all human probability of many more years of usefulness before retirement, have both been on the pay roll of the house for forty-six years. With this explanation and with the BULLETIN's congratulations to Mr. Rockwood, coupled with its best wishes for a long continuance in the profession he has done so much to grace, we print Mr. Rockwood's letter, which is as follows :

"NEW YORK, April 28, 1899.

"Messrs. E. & H. T. ANTHONY,
"591 Broadway, N. Y. City.

"GENTLEMEN,—It may be a matter of interest to you that forty years ago to-day I entered my first order at your establishment, and have had an account there up to date. I believe I am your oldest customer and, if I mistake not, there is not one connected with the establishment to-day that was there in any capacity on the opening of my account. My returning health gives me the hope that I may add to this very unusual term of business association.

"Yours very truly,
"GEO. G. ROCKWOOD."

A PLAIN DUTY.

THE time is at hand when all energetic and interested photographers, who have a desire to be in the front rank, and lead in their profession, are considering the best means of such attainment.

How to secure the latest ideas, both artistic and mechanical, necessary to the production of such work as will command the attention of the critical public taste of to-day, is a leading question.

To-day we are confronted with an enlightened and cultured people, who are demanding first-class work from all ; and he who strives to live within himself will soon discover that he is a hermit in his profession, relegated to the rear, in this rapidly moving march of photography.

To all whose attention may be cast in the direction of a definite solution as to the best means of securing first-class results, nothing presents itself more clearly than the need of attendance at the coming

Convention at Celeron, July 17th to 22d, inclusive ; there to exchange ideas with your associates, mutually giving and gaining in knowledge. Returning home, you may demonstrate the wisdom of your attendance.

The School of Photography this year, under the auspices of the American Aristotype Company, will be more complete than ever.

Posing, lighting, and printing will be practically demonstrated by able and competent instructors. No one can afford to miss this important feature of the Convention. Even the most advanced will find these lessons of practical value.

The art instruction will also be well cared for by the talented Professor Loreda Taft of Chicago, from whom valuable instruction will be gained by the attentive listener who shall be fortunate enough to hear his remarks.

The competitive lists are of such variety as find a place for all workmen, and you are urged to place your best work in some of the various classes.

Not with the sole aim of winning, this is commendable, but comparison of results has done more for many of our craft than the mere winning of a prize.

Our board is working assiduously for your instruction, comfort, and entertainment during the week of the Convention, and you can in no better way endorse our efforts than by being there, that we may meet and greet you with hearty good cheer.

Don't sleep by the dates. Yours truly,

F. R. BARROWS,

CELERON, July 17th to 22d.

Second Vice-President, P. A. of A.

HO, FOR CHAUTAUQUA !

FOLLOWING the custom established four years ago, the BULLETIN takes pleasure in announcing that it will inaugurate a BULLETIN Excursion Party to the Convention, and will undertake to provide the best of accommodation, good company, and, so far as it can promise, a pleasurable trip to all who may intend to go to the Convention from New York and vicinity ; and it will be glad to have the names of those intending to attend the Convention at an early date.

It is impossible, at the present moment, to say just what the fare will be ; but it is presumed that the same arrangements will be made as were obtained last year, which will bring the price of the fare from New York to Celeron and return, \$12 ; a double berth \$2.50, and the price of a whole section, or two berths, \$5. The BULLETIN hopes to have even a larger party than last year, which then filled a parlor car, and which was the beginning of acquaintance and friendship that has lasted, in several cases, throughout the year, to the advantage of all interested. It goes without saying that a party of this kind can pass away the time consumed in traveling more pleasantly than can a single individual traveling by himself, and the BULLETIN urges all its friends who contemplate attending the Convention to join its party for the Convention of 1899. It will be necessary, in order that the best facilities available are obtained for all, that those intending to make a part of the party signify their intention at once, in order that proper accommodations can be secured. We, therefore, ask all interested and

intending to attend, to send their names or communicate at once with the editor of the BULLETIN, 591 Broadway, New York, who will answer any questions that may be asked, and see to it that accommodations are provided.

Hotel rates, we understand, will be made with special reference to the Convention, and will probably list about as last year. It will be well for those intending to attend the Convention to make arrangements beforehand for their rooms, as it is not safe to leave matters of this kind until the last moment.

Be it remembered that ladies are welcome, and will be entertained while in Celeron.

The BULLETIN hopes to have a large and enthusiastic party for 1899, and all communications will be cheerfully answered by the editor.



“AGFA,” A NEW INTENSIFIER.

BY FRITZ HANSEN.

ONE of the photographic manipulations which can scarcely show any practical improvement during the later years is intensification, by which, for one reason or other, too thin negatives or those without contrast, can be essentially improved in such a way that the silver of the picture part passes into a more intense or opaque connection, or a precipitate of a substance obstructing the passage of light more or less is produced at the picture part.

As even the most skillful operator will not always succeed in obtaining for certain printing methods a negative without requiring intensification, the different ways to intensify are of some importance. This after-treatment is much more difficult with dry plates than in the wet process, as color, printing capacity, etc., play a considerable part in the negative process with bromide of silver gelatine. There are two principal methods which are applied.

The easiest and most applied intensifying method is the one with bichloride of mercury.

The black silver picture is here bleached with a solution of bichloride of mercury. The picture so obtained, which in this state possesses an increased transparency to light, is, after a thorough washing, blackened again by treatment with ammonia, cyanide of silver, or sulphite of soda, and then washed again. Aside from this double manipulation, the mercury intensification has several disadvantages, and although they can be moderated by exactly following the prescription, they can never be entirely removed.

Another manner of intensification is with uranium. This can be executed in one operation; but the intense red brown coloration taken by the silver picture is not constant, and makes it impossible to judge about the strength of the picture. This way of intensification may, therefore, be employed for landscapes, but it will not do for portrait purposes. It is also not very durable.

The ideal of an intensifier would be a liquid, which requires only a dilution with water to intensify directly. This is reached by the new intensifier, “Agfa,” for which patent has been applied, and which will be in the market soon.

By application of the Agfa intensifier, whose solution is durable, the photographic silver picture is intensified with the correct coloration in one operation. For use, it is diluted with 10 parts of water, and the negative or positive to be intensified is put into the solution. It is left in the tray until the desired degree of intensification has been obtained. The negative is then washed and dried.

Translated by HENRY DIETRICH.

SOME LITTLE-KNOWN METHODS OF INTENSIFICATION.

F. C. LAMBERT.

AS an experimentalist in photographic matters, it is often a matter of surprise with me to note how conservative the great majority of photographers are as regards the means they employ in negative making. For example, when a negative needs intensification, nine out of ten, perhaps ninety-nine out of every hundred, use the mercury bichloride-ammonia method. True, they know, have heard or read, of other methods—perhaps even tried some other method—that habit has wedded them to a process. They know its shortcomings, and it by no means always gives just the result wanted, yet the bottles are there handy on the shelf. Any other process would involve trouble. “Busy now.” “Another time,” etc. Then, again, with regard to reduction, one may say that fully 99 per cent. of negatives that are reduced are treated by the ferricyanide and hypo process. In fact, not a few old hands hardly know of any other reduction method.

Now all this seems a great pity, because it is like limiting oneself where there is no advantage. It is like trying to cure every disease with one physic, or having every dish flavored with the same condiment.

Now first with regard to having a choice of two or three intensification methods. Seeing that there are a dozen or more methods open to us, every one having its good points and special suitability to certain cases, it is by no means easy to make a choice. But first, just a word about the mercury bichloride method. The usual procedure is to bleach the plate in a saturated solution of this salt, wash and blacken with dilute ammonia.

Let us not forget that in this process, instead of ammonia, we can use several other things which will darken the plate, but not all equally. Therefore, it is well to have at hand a few of them, so that we can get slight, moderate or strong intensification, just as we please. Let me here set down in order of strength-giving power some of the various agents available:

- A. Potassium Hydrate.*—(Caustic potash, 2 parts; water, 100 parts.)
- B. Lime Water.*—(Saturate solution of quick lime in water.)
- C. Soda Sulphite.*—(Soda sulphite, 10 parts; water, 100 parts.)
- D. Ammonia.*—(Liquid ammonia, 4 parts; water, 100 parts.)
- E. Ammonium Sulphide.*—(The ordinary yellow solution, 1 part; water, 10 parts.)
- F. Schlippe Salt.*—(Schlippe salt, 3 parts; ammonia, 1 part; water, 100 parts.)

The range here available is something very considerable indeed, and the reader who is in earnest, and wants to make this note of real use, will cut up a thin negative into, say six strips; bleach in mercury and wash them all together, and then dark each of his six strips by one or other of the *A B C* methods just given. He will find that *A* and *B* give but very little additional strength, while *E* and *F* will convert a

mere ghost of a negative into one which requires long printing in a good light. Let not the reader now think that the list above given exhausts the known methods of darkening the plate. On the contrary, there are several more methods. But they are not now given, because the range selected, covers all the practical needs of the worker, and care has been taken to choose darkeners, which are easily prepared. One more method, however, needs special mention, because as regards fading or any subsequent change, it has the best possible chance of existence, and it is a method which can be repeated over and over again any number of times, each time giving a further gain of density. This is the method of darkening by the ordinary ferrous oxalate developer. In case any reader has not tried this method, we here jot down in brief, the steps of the process:

1. After fixing, the negative must be thoroughly freed from hypo. This is essential for really good results.

2. Bleach in saturated solution of mercury bichloride.

3. Again, wash very thoroughly indeed.

4. Darken in the following solution: Make saturated solutions of potassium oxalate, also of ferrous sulphate (iron protosulphate). Of the potassium oxalate solution, take 6 parts, and to it add one part of the iron solution. [N. B.—The iron must be added to the oxalate and not *vice versa*, or a useless, muddy solution results.]

5. When darkened right through, rinse the plate in acid (not tap) water. The acid water may be conveniently prepared by putting a dram or so of glacial acetic acid in a pint jug, and filling up with tap water, or rain water. This is to wash out the oxalate from the film, and prevent a precipitate of lime oxalate forming. After three or four rinsings with acid water, then ordinary tap water may be used. The process may from this point be repeated over and over again. If acetic acid be not at hand, ordinary hydrochloric acid may be used, but in hot weather there is a little risk of frilling. Before quitting the mercury process, it may be convenient to call attention to one or two points often lost sight of. (1) Do not forget that that what you made up yesterday as a saturated solution, and then used for half a dozen plates, is no longer saturated now. Some of the mercury has been withdrawn, so that you may now add more bichloride, shake well and filter, unless you don't mind a generous crop of spots. (2) In cold weather the bleaching is sometimes rather a slow business. Therefore, you make a stronger, quicker acting solution, as follows: In each ounce of water first dissolve 10 grams of ammonium chloride; then add the powdered mercury bichloride until the liquid will not dissolve any more. (3) Do not forget that strong light has an action on mercury bichloride, forming mercurous chloride (calomel), and also an oxychloride of mercury. This, then, is another reason why one should filter the solution before use. (4) Do not be tempted to use a solution of "ammonia .880," stronger than about 1 part ammonia to 25 parts or so of water. For if you do, you will find that the ammonia has dissolved away some of the converted silver chloride, and that you are losing rather than gaining density. It is far better to use ammonia,

dilute 1 to 30 parts water, and give it full time to get right through to the back of the film. As it is quite a common thing to find workers using too strong ammonia, and then complaining of want of density, special attention is here called to this point. (5) The one fatal step is insufficient washing after fixing. The result, sooner or later, will be yellow-brown patches, which are most difficult, if not quite impossible, to remove. The present writer has recently made a long series of some hundreds of experiments in connection with intensifications, reduction and kindred matters, and has thought that a few notes of observations so gathered ought to be of practical assistance to the man who knows beforehand exactly what he wants, but is not quite sure which is the most direct method of getting it, and is not content to make one physic do for any and every disorder, knowing that sometimes the "cure is worse than the complaint."

THE BANE OF AMATEUR PORTRAITURE.

BY HARRY B. MASON.

AFTER much observation and thought I am convinced that it is the lack of simplicity and truthfulness which has prevented much otherwise commendable amateur photographic portraiture from having real art values. I think no one, bearing this statement in mind, can go along the walls of an amateur exhibition without being impressed with its verity. Here will be a dainty piece representing a young miss, presumably absorbed in a letter from the only man in the world. But, alas! her attitude is that of stilted repose. She handles the letter in the most delicate and studied manner imaginable. She is dressed in a low-necked gown, bedecked with ruffles and ribbons and flounces galore, and around her fair throat is a necklace of pearls, which is probably a family heirloom. As though, forsooth, a girl would or could put off reading a love letter three hours while she made a perfect toilette for the occasion.

The very untruthfulness of the piece prevents it from expressing the idea behind it, and prevents it, therefore, from being art. If the model had been dressed in a morning gown, with, perhaps, a dainty apron over; and if, possibly, her hair had been a bit awry; if in her lap had been carelessly put a piece of sewing or embroidery, which she might be supposed to have dropped in her eagerness to open the all-important missive; and if she had been given the position, and, if possible, the eager and absorbed attention of one in her condition, then would the piece have expressed the conception in the mind of its creator. Then would it have been a piece of art!

A couple of years ago I was associated with a young boy of fourteen or fifteen, who was much given to abstraction of thought. He would sit for hours with a dreamy look on his fine, sensitive face, completely absorbed in the fancies which his visionary nature created. Suddenly it occurred to me one day that I would make a representative portrait of him when the circumstances were favorable. He happened in my photographic room one morning not long afterward, carelessly

dressed and ungainly as usual. I thought, "Here is my chance." But suddenly there loomed up many difficulties. So soon as I begin to pose him, thought I, all the awkwardness of the boy of fourteen will make itself apparent; the dreamy, absorbed look will be replaced by one ludicrously self-conscious, and my aim will be effectively defeated. This was indeed discouraging, but quickly there came an inspiration. Why not trick him into his characteristic attitude? So, with the ready fib which I assume is the prerogative of the artist, I told him I wanted to see the effect of a certain scheme of lighting of which I had been thinking, and asked if he would simply sit down and keep more or less still while I made my observations, indifferently saying that I intended making no exposure. Of course he was glad to help me in this, as before he had been in many other things. So I indifferently placed him in a careless position and proceeded to arrange things to my taste. His clothes, his necktie, his shoes, all displayed his usual indifference to appearances; but his hair, strange to say, was in perfect order. And so I accidentally brushed this several times with my sleeve until it was more in keeping with the rest of his toilet. Then I so arranged the light, concentrating it softly on his face and sinking it elsewhere, as to make him appear sitting in semi-darkness, for I thought this would better carry out the conception. Before I had proceeded very far he had forgotten me, had sunk into his usual lazy attitude, and was taken up with those inward visions which brought such a dreamy and pleasing look to his face. Eureka! I had him on the plate in an instant! I took every care in developing the exposure and in printing, and I was quite pleased with the result. But when I sent one of the prints to the boy's mother, she, having a mother's pride in her boy, which led her, first of all, to desire his good appearance, asked him why he didn't put on his stand-up collar, a pair of cuffs, his good coat, comb his hair, and then sit up straight, as though he had some life and pride.

If all this had been done, what would be the result? Why, the piece would not have been at all representative of the boy. Not only would there have been lost that dreamy absorption which was the very essence of his character—and it is this essence of character which is and must be the chief virtue of a portrait—but, looking so immaculate and stiff-backed, he would, in addition to losing his real character, have taken on another which was unnatural and not at all characteristic. What we want in a likeness is that which will bring the original before us, which will express his character—yea, even his very soul—not a picture which flatters him, which makes him to appear well dressed, and handsome, and—unnatural!

I am far from implying that the sitter's hair should always be tousled; that old clothes should always be worn; that careless and lazy attitudes should always be secured. What I do mean is this: Be true to your purpose! If you are making a "study," that purpose is to express a conception in your mind, in which case you use the sitter merely as a means to end. If you are making a likeness, your purpose is then to represent an individual, in which case the sitter is the end in himself. Now in order truly to express the conception, or truly to

represent the individual, you must express and represent these characteristically. If you do not, this, your work will fail of its purpose; it will fail to arouse the emotion which you intended; it will fail, therefore, to be art. If, truly and characteristically to carry out your purpose, you need to use plain clothes and have the toilet a bit awry, have the courage to do these things. But if fine clothes and rare lace and sparkling jewels and haughty pose are characteristic of the conception in your mind, or of the individual you wish to represent, then use these things. If you want to make a study of a young woman, entitled, say, "After the Ball," she must have on all the paraphernalia of the ball-room; but if you want to get a good likeness of the girl herself, dress her in the manner which is her usual custom, and give her the attitude and the expression which are most characteristic. Be true to your purpose, whatever it may be. Strive for truthfulness and simplicity and representativeness.

Suppose you want to get a likeness of the dear old father who, ever since you can remember, has put on his slippers after supper, perhaps also filled his meerschaum, and then comfortably settled himself before the fire to read the day's news, or to have a chat with the family gathered about. If you enclose him in his Sunday-go-to-meeting suit, comb his hair until no stray lock is out of place, set him up straight in a high-backed chair, and then have him look off vacantly into space, will the result, handsome and well-groomed though the old fellow may look, be representative of what he really is to you and has been all your life? Will it not be better to have him as we saw him a minute ago before the fire, with newspaper in hand? Will it not be better to obtain a picture which will make people say: "Why, how good that is! I have seen him like that a thousand times!"

But, having dressed the subject appropriately, and placed him in appropriate surroundings, it is not easy to get the natural expression and position which are characteristic. It is much easier, indeed, to get the ordinary, stiff, stilted, but usually admired, manner, which says so plainly: "I am having my picture taken." Often have I worked for hours to get my friends to drop all camera fright and to fall into the positions and expressions which I have associated with them. Sometimes you can trap them as I did the boy of whom I spoke a few minutes ago, but usually the game is not to be captured so easily. Patient, tactful, careful effort is most always necessary. Experience soon gets one so he may put his subject in the position he thinks necessary, but, having done this, there is the more difficult matter of expression to conquer. But there are a number of little tricks that may be resorted to here. Strive to get the subject to forget himself. Talk to him about something entirely foreign to your present efforts. Get him to read the book or paper which you may, perchance, have placed in his lap, or make the exposure in a moment when he is not expecting it. Ingenuity, tact, study, patience, experience, these things are all necessary if you would obtain a picture which will make people say: "Why, I have seen him look like that a thousand times!" But when people do say that, depend upon it the picture is representative, it is truthful, it is characteristic. And because it has these qualities, it has also the essential qualities of all true art. For art, reduced to its last analysis, is but the capable expression of either Nature, on the one hand, or, on the other, a fancy born in the artist's mind and soul. The very first condition of this expression is truth. The more skillfully and individually and pleasingly that truth is conveyed, the more attractive it is made to appear, the greater is the degree of art achieved.

A DEMONSTRATION OF SILVER PRINTING AT COLUMBIA UNIVERSITY.

A PRACTICAL demonstration of the working of Aristo paper was given before the Class in Chemistry and Mining of Columbia University early in May by Mr. C. F. Becker, a stenographic report of which follows. Introducing Mr. Becker to the class, which numbered for this lecture nearly one hundred members, Professor C. F. Chandler said :

Gentlemen, I have the pleasure of introducing to you Mr. Becker, who has kindly consented to initiate you into the mysteries of silver printing in a particular manner and with a particular kind of paper, which he will explain to you.

Mr. BECKER.—The paper we are about to demonstrate is called Aristo Platino, and is a collodion chloride paper differing altogether in manipulation from the old albumen paper. I will pass among the members here a printed sample and let them see for themselves the depth of the printing on this paper, necessary for best results with double toning.

The gentlemen will please retain these prints for a few moments in order to compare and note the difference between the prints now and after the first toning. If you will notice the prints now you will see that the high lights are very well graded over and tinted and that the shadows are bronzed. The idea of printing so dark is to allow for double toning. We first tone in a gold bath, and then in a platinum bath. You see it requires very dark printing for two tonings. You will note now the process of washing. In the very first wash water, it is always advisable to have a saturated solution of sal soda, using about 2 ounces of it to every 100 ounces of water. The purpose of using this soda is to remove any finger-marks on the paper, or grease of any kind, or sometimes if you have not washed all the chemical preservative from the paper in the first wash, it may leave red stains on the prints in toning bath.

Now these prints, after they are in the solution of soda and water, are left for about five minutes, and moved around during this time, and not kept lying stationary in one place. This is to get the prints well saturated with this solution. After that, take out and wash through six changes of clear water before toning, and have the prints separated well in each change. There are many amateurs and not a few photographers who place the prints in a tray and allow the water to run on them because they do not want the trouble of separating them from one tray to another. It is best to wash the pictures by hand because in this way you remove all the free silver from the print. If you take a batch of prints and let water run on them in a basin, as I said before, the prints really washed are those on top and those on the bottom ; the center prints are not washed at all. The prints that I have given out before have not been washed. They are just in the print form as we took them from the negatives, and they will turn dark if exposed to a strong light.

Professor CHANDLER.—I understand the pictures which were circu-

lated are simple Aristo paper prints after being exposed under the negative, and nothing beyond that. They have not been toned, and have not been fixed, and consequently these pictures will all come out in uniform dark color in the light. They are simply paper exposed under the negative.

(Mr. Becker had been washing a lot of prints, first in sal soda bath and subsequently in six changes of clear water, while talking, and samples were shown and compared with the unwashed prints.)

Mr. BECKER.—*The Gold Toning Bath*.—In toning Aristo paper it is always best to have the bath made up three or four hours before using; it gives the bath a chance to ripen. For if we make up this bath new, and use it at once, it will probably work a little too harsh at first, and may tone a trifle around the edges, on account of being a new bath and not ripened. The bath is made up of gold and borax. Make up a saturated solution of borax and use enough in the gold bath to turn red litmus paper blue. In speaking of litmus paper, there are several different kinds of litmus paper on the market; some in box form, some in sheets, and some in bottles. From my experience I find bottled litmus paper is the best because it is kept from air and light. Litmus paper is very sensitive, and when exposed to light or air it becomes useless. I find the best litmus paper is that made by E. & H. T. Anthony & Co., and sold in bottles.

To make up a bath, you take about 30 ounces of water, and if your pure chloride of gold is in 15-grain bottles, use 15 ounces of water in connection with this 15 grains for gold stock solution, taking 1 ounce of this gold stock solution to 30 ounces of water for starting the bath, or, if using Aristo gold, take $\frac{1}{2}$ dram to 30 ounces of water. Then add litmus paper, one piece of each, red and blue, and neutralize with a saturated solution of borax. The bath should become alkaline in about three or four minutes; this speed is plenty fast enough to bring the bath around to an alkaline state. In bringing your bath to alkaline form in too quick a time you are liable to get too much alkali in the bath, and the consequence is that when prints are toned, the high lights become muddy, and after going into the platinum bath they remain muddy, and whites turn yellow. An acid toning bath bleaches out the detail in whites, and makes pink whites in finished prints. It is very important to get your first toning bath in proper condition, and then you need not be afraid of the platinum bath.

(Litmus paper, turned after action of the bath, was here shown.)

If the bath is not alkaline enough, the prints will bleach in the whites, so it is very important to have the bath alkaline. Have red litmus paper turn blue. You can tell that, after trying the first print. If you find the print is eaten out in the high lights, you want to add more borax in bath.

In toning these prints I would not tone any faster than six to eight minutes, because toning faster has a tendency to eat out the detail of the prints. From six to eight minutes' toning in the gold bath is just about right. (Prints from the gold toning bath were here shown.)

You will notice in the prints I have just passed around that the high lights only are cleared up on the picture, while the shadows remain cherry red. This color is removed in the platinum bath.

The idea of using the platinum bath is to give the desired tone. When this print is finished it will be an olive-black color. There are different tones to be had on this paper. If you want to get a black and white print, you must tone down in the first bath to a purple, not to a blue, and you will have black and white in the platinum bath. If you want a blue-black, tone to a blue in the first bath, and then in the platinum bath they will come to a blue-black. You can also get a beautiful sepia tone on this paper by just toning in the first bath, washing the prints the same as for ordinary toning, only in the third washing you should put them through a solution of salt, using about 2 ounces to a gallon of water, then about two or three changes of water before putting into toning bath. Toning bath is made up of gold and borax, made slightly alkaline. Just clear the high lights in this bath, and then fix for fifteen minutes in hypo bath, 10 hydrometer test, then wash for one hour in running water. This is the method followed to get sepia tones.

PROFESSOR CHANDLER.—Mr. Becker tells me they have also another system, in which the effect of the two baths is combined in one.

MR. BECKER.—We have a bath called Aristo Single-Toning Solution. It combines the two baths in one, with just one toning. This is not a combined toning and fixing bath, as the prints are fixed after toning. Its principal advantage is that it saves time. The tone it produces is very beautiful, and it is being quite extensively used. I do not think I shall have time to demonstrate this bath this morning, but it is very easy to work. Directions come on every bottle of the Single-Toner, and it is no trouble to tone at all.

Proceeding with his demonstration, Mr. Becker said :

After the toning bath the prints are washed through three changes of water before they go into the platinum bath. The object of this is to wash the gold thoroughly from the print before it goes into the platinum bath, for if you carry any gold into the platinum bath, it precipitates the platinum and stops the action of the bath ; so take great care in seeing that your prints are thoroughly washed before putting in platinum bath. It also applies to prints after they come from the platinum bath. Wash three times before putting into hypo, because if any acid is carried from the platinum bath into the hypo, it causes sulphurization and yellow whites. This is also an important point.

We also have a collodion paper—Aristo, Junior—with a glossy surface, which I will pass among you with a couple of prints, to let you see the effect of tone. These are toned simply in the gold bath. (Toning had been carried along with the other prints up to this point.) They can be toned right through the platinum, but the majority of photographers who use Aristo Junior paper simply tone in the first bath. It also can be used in single-toning bath with same result as on Platino paper, and very beautiful results can be obtained.

MR. BECKER.—*The Platinum Bath.*—The platinum bath is made up of 30 ounces of water and about a dram to a dram and a half of Aristo platinum. The platinum solution comes all ready made up, and is sold in two sizes. The platinum has the phosphoric acid in it all ready for use. You can make up your own platinum solution by taking 15 grains platinite, adding $2\frac{1}{2}$ drams phosphoric acid, 50 per cent., and about 9 ounces of water, and you have a stock solution all ready for use. To make up bath with platinum solution (prepared), use about 2 to $2\frac{1}{2}$ drams to the $1\frac{1}{2}$ used in the prepared form.

Showing several prints as they look before going into the platinum bath, Mr. Becker said :

You will notice that the whites are clear and the shadows cherry color. This print has been toned in gold bath, and is now ready to go into the platinum bath. The prints in this bath should tone in from



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eight to ten minutes. If you find the bath is working along slowly, add more platinum solution, because slow toning is liable to flatten out effects. Eight to ten minutes is the speed required. After prints are toned in this bath and thoroughly washed, they are put into a solution of hypo and water. We make up a hypo bath of 1 ounce hypo to 16 ounces of water, or 18 hydrometer test. Prints remain in hypo fifteen minutes, after which time they are taken out and thoroughly washed in ten or twelve changes of water by hand, or one to one and one-half hours in running water. I would advise washing by hand.

Professor CHANDLER.—The test by which Mr. Becker determines when toning in the platinum is finished, is by the complete disappearance of the red in the shadows.

Mr. BECKER.—In holding prints up to transmitted light you can always see if any red remains on the surface. The prints must remain in the platinum bath until all that disappears from the surface. Don't be afraid to tone in the platinum bath.

(Prints were here shown washed and not toned, toned in gold only, and others almost toned in platinum. Difference very noticeable.)

Professor CHANDLER.—Mr. Becker has told you the whole story. It is a very simple matter, if you have the proper materials and once see the manipulation. The point is first to wash the prints after coming from the printing-frame in water containing soda, then to tone in the gold bath, thoroughly washing them, and afterwards to tone in the platinum bath. You could not have had a better opportunity to see how this process is carried out. It is probably the most beautiful of all the toning processes we have. I am much obliged to Mr. Becker for the trouble he has taken to give you this opportunity.



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Photographed and copyright by W. C. GIBBON.

Made during a hail storm July 22, 1898, at 10 P.M.

SOUTH DAKOTA LIGHTNING.

ON THE REMOVAL OF SILVER STAINS FROM GELATINE NEGATIVES.

A. T. NEWTON, IN "BRITISH JOURNAL OF PHOTOGRAPHY."

PERHAPS there is no more dreaded injury throughout the whole course of photographic procedure than that arising from the staining of valuable negatives by reason of having placed the same in contact with one or other of the silver printing papers during damp weather, or by the accidental or unseen attachment of a sheet of printing paper to a negative some portion of which is in a damp condition.

In such cases as where a spot of rain or water has accidentally fallen on the surface of a negative and printing paper has been placed in contact unknowingly, the mischief soon becomes apparent, and by soaking both the negative and the partially printed picture at once in a bath of clean, cold water a very little coaxing will suffice to detach the adhering paper from the surface of the negative without injuring the same to any extent. There is, however, a far more insidious source of stains to which negatives are liable, and which arise even in the face of what many may term sufficient precautions being taken to guard against such injury. These stains do not put in an appearance during or for a considerable time after the negative has been in use for printing, and it is only when such negatives happen to be examined some time afterwards that the dreaded brown silver stains become visible. These silver stains have by many expert photographers been considered beyond the possibility of removal, or at least as capable of being removed without at the same time injuring the negative to such an extent as to practically ruin the same; and, judging from the repeated questions that appear in various of our photographic journals, it has come to be looked upon as an injury quite beyond the power of any one rectifying.

For several years I closely studied this matter and spent much time and pains in endeavoring to find a remedy for these stains. I need not trouble the readers of *The British Journal of Photography* with a detailed statement of the numerous experiments that I conducted from time to time; the main point lies, however, in the fact that such experiments have resulted in my succeeding in the attempt; and as will be seen on perusal of the following lines, even in a surprisingly simple and easy manner.

When I first studied this matter I was forcibly impressed with the difference in appearance which those negatives presented that had been stained for a considerable length of time over those that had only recently contracted the stain. In the former case, such as where a negative has been stained and placed away for several months, this brown stain will in all probability advance to what I term a secondary stage of the trouble, that is the brown color which first puts in an appearance will become not only more pronounced and get deeper set into the film, but the surface of the stain will assume a peculiar metallic or lustrous appearance quite absent in cases where the stain is of recent contracting.

Of the two kinds of stains the former proved during my experiments by far the more difficult to eradicate, and I soon found out that the treatment which sufficed to remove an ordinary silver stain, that is, in cases where the metallic or lustrous appearance was absent, was quite ineffectual to remove such stains when this additional evil was present, and after several attempts I saw clearly that this metallic appearance was only confined to the surface of the stain, and was in point of fact acting as a waterproof coating, resisting any reducing fluid or solution that was applied to the surface of such.

A little reasoning then induced me to try the effect of removing this metallic lustre by other than chemical means, and so I gave my attention to the application of some mechanical means whereby the thin coating could be removed by friction, and no sooner did I resort to this treatment than I at once became master of the situation and could remove the most pronounced stains with ease without injury to the negative.

Any one who has had experience of this trouble will readily understand that these stains put in an appearance more frequently when gelatine negatives have not been varnished, although a coating of varnish is not an absolute protection against such. Should such stains have to be treated in cases where negatives have been varnished, the first step is to remove the varnish by soaking the negative in strong methylated spirits until the varnish is quite removed. Such films will then be in a condition to be treated to the necessary manipulations which I am about to describe.

In the case of a negative which has contracted this injury, the surfaces of which have a metallic appearance, the first step necessary before subjecting the film to the application of any reducing agent is to get rid of the metallic deposit by means of friction, and after several attempts I found I succeeded best by employing some extremely fine pumice powder. It will stand to reason that such powder must contain no lumps or particles that would be liable to cause injury to the surface of the negative or scratch the same to any extent. The sample of pumice powder which I have found most suitable is that used by process-block makers for polishing their zinc slabs, and called by some workers levigated silicate. This powder contains no lumps or coarse particles, and has proved in my hands invaluable for this purpose.

It stands to reason that, when it is applied to the surface of the negative at those parts where the stain is located, it should only be rubbed over the stains alone, and, with a gentle touch, working in a circular movement with the point of the finger. It will be seen that only a slight friction is needed at this stage, for the aim is not to remove entirely the silver stain by its means, but merely to cause the metallic coating to disappear so as to permit of the action of the reducing solution which is afterwards to be applied.

The application of pumice powder in this work is, however, quite within the bounds of practicability, and any one can rub the surface of a stain without in any way injuring the negative.

When once it is seen that the metallic appearance has disappeared,

the remaining treatment consists of the exercise of a little patience, no skill being required, for all that remains to accomplish is simply soaking the negative in the necessary solution until the stain has disappeared, or at least so far reduced as to become of no practical detriment to the negative.

In cases where negatives have contracted these stains, and they are not of long standing, the application of rubbing is not required, and a few minutes' soaking or immersion in the reducing solution will cause their removal as if by magic.

On the other hand, there is a class of stains that may have been present in a negative for a long time, even years, and which, through being well stored, never appear with the metallic deposit on the surface, but have the stain deep down into the film, and negatives taken on thick film are more troublesome to deal with than thin ones, although as yet I have never met with a case beyond the possibility of yielding to the treatment I am describing. It is only a matter of time; stains of recent contracting may yield to the treatment in five or ten minutes' time, whilst those of long standing may require several hours before the stains will disappear.

In the course of my experiments in this matter I naturally reasoned in my own mind as to what these stains consisted of, and was driven to the conclusion that a stain which had not contracted a metallic luster consisted more or less of chloride of silver, and so I proceeded, first of all, to produce a negative with the stains by placing in contact sensitive paper and a damp film. In three days I had a plentiful crop of the evil, and then I waited a few days longer, during which time I repeatedly watched the progress of the stains by means of a microscope, using a good quarter-inch objective.

The outcome of these experiments prompted me to try the power of our good old friend hypo as a reducing agent, and, to my great satisfaction, after immersing the negative with the stains that I had purposely caused to appear, the stains disappeared, as by magic, in less than ten minutes.

Encouraged by the success of this experiment, I immediately looked out some negatives that had been stained for years, and also solicited several from my friends. In every instance the results were successful where no metallic coating of the stain was present. I then set myself to reason out the necessary treatment of negatives having this defect, and by removing the same with friction, as described, and eventually immersing the negatives in freshly mixed hypo, in the proportion of 3 parts of a saturated solution to 1 of water, I invariably succeeded in getting rid of the stains; but, as I have said, it takes a much longer time in the hypo to remove deep-seated stains than those of recent contracting. I feel sure that any readers of the *British Journal of Photography* who carefully apply the treatment will find these dreaded visitors more easily got rid of than has hitherto been deemed possible; but it should be borne in mind that the sooner a negative is treated after it has contracted these stains the better; five or ten minutes in the hypo will then remove them.

PORTRAITURE.*

BY WILLIAM CROOKE.

IT is now some years since I had the pleasure of speaking to the members of this Society, and I am glad to have the opportunity afforded me by the courtesy of your President of expressing my satisfaction at the wonderful strides which it has made during the interval. This rapid development is doubtless due in a large measure to the exertions of the carefully selected office-bearers, who, through the disinterested fulfillment of their various duties, from the President downwards, have so successfully imbued the Society with the sense of vigor and prosperity which it now enjoys.

Passing on to the influence of outside elements, there is no doubt that much impetus has been afforded by the introduction of so much amateur talent, and these members, we are all aware, have usually much more time, and also money, at their disposal than their professional brethren. In fact, of recent years even the most casual observer cannot fail to be struck with the fact that the professional members only represent a very small fraction of the membership. With the stupendous army of workers which it now boasts it is hardly astonishing to find that the work of the Society has extended out in octopus fashion, embracing all the different branches of the photographic art.

The subject which I deem it my privilege to bring before you to-night is a well-worn one; but as two people seldom entertain identical ideas on one subject, I may perhaps be able to give some details which my experience in portraiture has enabled me to acquire. Edinburgh has, from the very earliest days of photography, held a prominent position with regard to portraiture, and I need only here mention the well-known name of B. O. Hill, many of whose admirable works can be held up as examples to the present day. In fact, if we come to study the question, I doubt if our up-to-date professional photographer would find that he had made progress adequate in proportion to the facilities which are placed at his disposal. Take, for instance, the infinite variety of textures available in paper, and the wonderful improvement which art and ingenuity have invented in the methods of printing and in the science of optics, and last but not least, in the marvelously increased speed of the sensitive film. My verdict is, we have not. I can recall some of the meetings of our brethren in the seventies, when all our energies were directed towards the obviating of streaks, oyster-shell markings and pin-holes resulting from the silver bath; and when we take into consideration that the present photographic generation has been relieved of this, and numerous other difficulties, for the past fifteen or twenty years, it seems that a corresponding amount of study has not been accorded to the art side of photography.

Portraiture, you will grant, is by far the most difficult branch of our art. Take any other object as a subject for the camera, and with sufficient technical knowledge the obstacles are by no means insurmountable; but what else in creation can compare with the human countenance for mutability and variety of change? Health, temper, frame of mind, or dress are but a few of the contending difficulties which meet the professional photographer, for to combine a pleasing portrait with a true likeness must be our end and aim. As our subjects are seldom perfect, it is necessary to keep constantly before our mental vision a distinctly ideal form, so that when deformity presents itself, or even a slight deviation from our idea of perfection in the human form divine, we may be able to discreetly modify the defect by the various means at our disposal, without entirely obliterating any point which may tend to spoil the individuality of our sitter, and so attempt a deceit which is a distinct violation of the rules of true portraiture.

I think that most of us are cognizant how very unmerciful photography at times is apt to be; but if we can only bring our artistic knowledge to bear upon the difficulty, it is often more easily solved than we should imagine.

Shall we look for a few moments at the different points of the face, remarking, first of all, on the mouth?

* Read before the Edinburgh Photographic Society.

This, is, perhaps, the feature, and especially in ladies, which requires the most careful observation, and on no account should the mind of the subject be influenced to the consideration of it, or a total destruction of the natural lines will probably be the result. Much may be learned from a cursory conversation with a sitter, during which an opportunity is gained of observing the delineation of the mouth when in animation or repose. In many instances the youthful female mouth may be treated with the lips apart, but in this case a full illumination of the opening is necessary, as the tendency in photography is to obtain too dense a shadow, thereby destroying the delicate transparency that we admire in Nature. Children's mouths are a fascinating study, with their beautiful, soft, mobile lines, full of sweetness and repose seldom or ever to be found out of childhood. Unfortunately for photographers, however, this ideal expression is not the one most generally appreciated by the loving mother or auntie who may accompany the juvenile sitter, and a grin which distorts the bow-like mouth into a grin extending from ear to ear is more likely to meet with their favor. With advancing years the susceptibility of the mouth to change is more apparent than in any other feature. The development of characteristics, the results of certain habits, the circumstances of joy or sorrow, all tend to leave an indelible mark upon this most tell-tale feature, leaving compression of lips, and destroying with lines and twists the delicate mobility of youth. All this calls for our careful consideration in portraiture and demands our utmost skill in dealing with it. For instance, a twist may often be modified by a judicious pose of the head, and I shall make a reference later on to the treatment of lines.

And now, to pass on to the most attractive feature of the human visage, which is indisputably the human eye.

Again I must revert to the child. Here we find the eye abnormally large, a fact accounted for by the growth of that organ not being in accordance with the other features. Both in children and adults this charming feature cannot receive too much attention, for here you have to deal with the "windows of the soul." All our most interesting subjects have fine eyes. While on this subject, it is useful to remember that a certain latitude is allowed in the higher art of painting with regard to the size of the eye. But this is not a concession that we can apply to the photographic art. There are, however, certain conditions in our practice which tend to an opposite result unless we are on our guard, among which I may mention the indiscriminate use of light as being the most guilty factor, and it should always be borne in mind that too much light has the effect of dwarfing the eye. Stray lights are also detrimental, and are frequently caused by the mischievous use of white reflectors placed in too close proximity to the sitter. The seat of sweet feminine character is in the outer corner of the eye, and more particularly on the lower lid. Our greatest portrait painters fully recognized the importance of this most telling feature, for when receiving or parting with their subjects the eye was always the first and last to attract their attention.

We have now dealt with the two leading points of the face wherein mainly rests the expression, and the treatment of the other features, viz., the nose, chin and ears, must depend on the judicious point of vantage, which can only be selected by the photographer after a study of the contour of his sitter's head. The ugliness of a face may be decidedly modified by choosing either full, three-quarter or side view, and the calling into requisition of the charm of light and the mystery of shadow, remembering that the naked truth is deceitful.

Comparisons are proverbially odious, and, in comparing the works of the portrait painters with those of the photographer, it has been remarked that the latter only gave the "soot of the flames" (the subject of the criticism was, perhaps, printed in carbon), the reference being made to the extreme difficulty of securing an intelligent expression by photographic means. We are, however, consoled by the thought that the painter has many advantages which are denied to the photographer; and if the painter be endowed with mind he has ample opportunity of calling forth the mind of his model, while a machine cannot evoke a soul.

(To be continued.)

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

*W*ARM Tones upon Bromide of Silver Paper can be produced by a bath of fixing soda and alum, which slowly separates sulphur. The bath of consists of :

Hyposulphite of soda.....	300	grams.
Alum	30	"
Water.....	2½	liters.

The soda is dissolved first, the alum is gradually added, and the liquid is brought to a boiling point. When cooled off again to about 30 degrees C. the bath can be used. In the beginning it works slowly. It should not be filtered, and a fresh bath one-half of the quantity is added to the old one, when used again. If the bath is applied cold, the toning will take from ten to twelve hours instead of one-quarter to one-half an hour. Another bath for warm tones is the one with sulphate of ammonia ; 5 grams sulphate of ammonia are dissolved in 100 cubic centimeters of water, and the well-washed print is put into this solution. The bath acts slowly. It has an agreeable odor, and is, therefore, preferred.

Brown Platinum Prints.—It is a well-known fact, that bichloride of mercury will cause the formation of brown tones in the preparing solution, as well as in the developer. The following proportions may serve :

Normal oxalate developer.....	60	cubic centimeters.
Bichloride of mercury.....	7	" "

In the cold developing process a rich brown tone is obtained by applying the following developer :

Normal oxalate solutions.....	30	cubic centimeters.
Bromide of potassium solution (10 per cent.)....	3½	" "

This developer gives the best results if heated to 35 degrees C. If the developer is heated it becomes necessary to shorten the time of printing, making it a little less than would be sufficient if cold developer were used. To obtain black tones upon platinum paper, it is of advantage to give the developer an acid reaction. If the developer is alkaline, warmer tones will be obtained. The most suitable alkalis for this purpose are carbonate of soda and carbonate of potassium. Ammonia is not suitable. A diluted oxalate solution, which was kept for months in an open bottle, was applied at normal temperature, and it is said, gave an agreeable brownish tone.

New Platinum Toning Bath with Phenylendiamin Solution.—Professor Valenta asserts that metaphenylendiamin is to be recommended as an addition to platinum baths. The chloride salt of these bodies forms small colorless crystals, which dissolve easily in water, and have an acid reaction. If a solution of this salt is added to a gold solution, a reduction will take place. With platinum salts the reduction proceeds

however very slowly, and a mixture results which is very suitable for toning. The best formula, according to Valenta, is :

Potassium platinum chloride, 1:100	5 to 10 parts.
Metaphenyldiamin solution, 1:100.....	“ “
Water	100 parts.

The silver prints to be toned are washed for a short time in soft water, and are then immersed into the above bath, in which they assume very quickly an intense platinum tone. If a bluish black tone is desired, a gold toning should precede. Borax should be used for this. The borax bath is composed as follows :

Acetate of soda.....	10 parts.
Borax	10 “
Chloride of gold	0.5 part.
Water.....	1,000 parts.

The print must be well washed after being in the borax bath, and is then platinized.

Photographic Glass Etching.—To decorate glass in an easy and effective manner, without great expense, the etching process with silver fluoride can be applied. It is executed in the following manner :

A faultless, well-cleaned glass plate is given a light-sensitive coating, consisting of :

Albumen	90 cubic centimeters.
Liquid ammonia.....	3½ “ “
Indian ink ..	7 grams.
Bichromate of ammonia.....	4 “
Water	12 cubic centimeters.

and dried in the dark. The plate, when thoroughly dry, is then printed from two to three minutes in the sun under a diapositive after a line, or autotype, negative, and washed for about ten minutes in cold water to remove all soluble albumen. The plate so treated is now dried over a flame, or at the stove. When cold, the edge of the plate is surrounded with a border of wax, so that a kind of shallow dish is formed, whose bottom is the film side of the plate. Into this so-called dish a solution of—

Sodium fluoride.....	11 grams.
Alcohol.....	30 cubic centimeters.
Acetic acid.....	3½ “ “
Water.....	90 “ “

is poured.

After a few minutes the uncovered parts of the glass plate are etched. The etching solution is now poured off, and can be kept for further use, but in a gutta-percha bottle only.

The plate is now thoroughly washed with water, the wax is removed, and finally, the still adhering albumen film is removed by a caustic potash solution, and it is then washed once more. Instead of a diapositive, transparent drawings, steel engravings, lithographs, laces, etc., may be used for printing. In this way absolutely durable diapositives with artistic effect can be produced at moderate expense.

Photoxylography.—Three grams white gelatine and 3 grams white soap are dissolved in 160 cubic centimeters of water. This is done by first letting the gelatine swell in water for five to six hours, then dissolving it by heat and stirring in the soap, in the shape of a fine powder or fine flakes. To this is added a small quantity of powdered alum, until the liquid separates clear from the foam on top. The solution is finally filtered through muslin and a small quantity of it, to which has been added some zinc white, is spread upon the wood block, so that a very thin white coat forms. Upon the so-prepared and dried wooden surface the following solution is put, preferably with a brush :

Albumen.....	100 cubic centimeters.
Ammonium chloride.....	4½ grams.
Citric acid.....	1 gram.
Water	75 cubic centimeters.

The egg albumen is beaten to foam, left to settle, mixed with the water, and the salt and acid are added. After this coating has become thoroughly dry, the block is sensitized by immersing it into a strong silver bath, consisting of 11 grams nitrate of silver dissolved in 90 cubic centimeters of water. The silver solution can also be distributed upon the wooden block with a glass rod and the excess can be poured off. After drying, expose under a negative until the necessary strength has been reached, and then immerse the print for about three minutes in a strong salt bath, wash under the faucet, and fix in a concentrated solution of hyposulphite of soda. When dry, the block is ready for the wood cutter.

Preparation of Chloride of Silver Gelatine—Diapositive Plates.—The preparation of chloride of silver gelatine plates for printing out is very simple. The whole work can be done in ordinary weak lamp-light.

The composition of the light-sensitive film of the plate is quite analogous to that of Aristo paper, and in character the diapositives resemble those.

The glass plates to be used which must have been well acidified (at least six hours in a mixture of equal parts of crude nitric acid and water), are rubbed off under water with a brush, dried with a towel and polished. The side of the glass plate to be coated with emulsion is rubbed by means of a cotton tuft with a solution of 1 part isinglass in 100 parts of water, so that a very thin film only remains upon the plate. When dry, the emulsion can be put on.

The chloride of silver gelatine emulsion is made as follows: 12.5 grams hard gelatine, cut into strips, are put into a bottle and are mixed with 180 cubic centimeters of distilled water. After the gelatine has been left soaking for one-half hour, it is heated (in hot water) until it has completely dissolved. One gram pure sodium chloride is then added, and the whole is stirred with a glass rod.

In a second bottle, 7 grams nitrate of silver are dissolved in 35 cubic centimeters of distilled water, and this solution is heated to

about 50 degrees C. Further, a solution of 1.5 grams citric acid in 10 cubic centimeters of water is prepared and also heated.

The warm solutions are now mixed. To the sodium chloride gelatine solution the silver solution is added under constant stirring with a glass rod, and then the citric acid solution.

The emulsion, which has to be kept at a temperature of 50 degrees, is then filtered through a funnel, covered with flannel, and is now ready for flowing.

The glass plate, prepared with isinglass, is dusted off with a brush immediately before flowing. The emulsion flows very easily and uniformly.

After flowing, the plates are put on a leveling stand, until the gelatine film has become rigid, and left to dry.—P. HANNEKE.

AMMONIA PERSULPHATE, ITS PROPERTIES AND MANIFOLD APPLICATIONS IN PHOTOGRAPHY.

By G. PIZZIGHELLI.

(*Concluded.*)

THE property of the ammonium persulphate, to dissolve the silver of the picture, can be used to advantage for the direct production of positive pictures in the camera or for the production of duplicate negatives. The well-exposed negative is developed in a developer containing bromide of potassium, until the picture becomes distinctly visible upon the glass side. Before fixing, the picture is washed and immersed in a 5 per cent. solution of the persulphate and is left there (about twenty minutes) until it has completely disappeared. It is to be recommended, to add a little alum to the persulphate solution, to counteract the dissolving action of the same upon the gelatine. For the latter reason the strength of the persulphate solution should not be greater than 5 per cent.

After this treatment the picture film contains only the bromide of silver, not reduced by the developer, which is sufficient for a positive picture.

After washing, the plate is exposed to diffused light from twenty to thirty seconds and is then blackened in the developer. For this second reduction the ordinary developers are not sufficiently energetic. Namias adds, therefore, to the ordinary hydrochinone developer 10 grams caustic soda to each liter. This method of direct production of positives is much simpler than any others that have been recommended. Failures may, of course, take place, if not correctly applied. To obtain completely clear pictures, the development has to be extended pretty far, and as mentioned, the reduction in the high lights must have penetrated to the glass surface.

12. By reason of the remarkable action of the ammonium persulphate upon the silver of the picture it was to be accepted that it would also not be without influence upon the latent picture. Namias could indeed confirm the fact, that an exposed picture, when treated for five

minutes with a 2 per cent. persulphate solution, will lose its developing capacity completely. A shorter time of action only weakens the picture, so that perhaps advantage could be derived from this property, to reduce the consequences of a strong over-exposure.

The few tests made do not, however justify us in giving a definite opinion in the matter.

13. The property of the ammonium persulphate, in changing the chrome oxides into chromic acid, makes possible its employment for the development of over-printed pictures upon chromate films in cases where with the ordinary means nothing can be accomplished. The process is applicable for carbon paper and the chromate films of the photo-mechanical reproduction processes. For this a 5 per cent. ammonium persulphate solution with 1 per cent. of sulphuric acid is used and it is left to act for half an hour or longer. After this, develop with lukewarm water. The persulphate oxidizes in presence of sulphuric acid and dissolves, at least partly, the insoluble chrome gelatine or chrome albumen compound, so that the picture-carrier will become easier soluble in lukewarm water. Namias believes, that the persulphate can also be used for the restoration of spoiled pigment papers, still no tests have been made in this direction.

14. A very important application can be made from the capacity of the ammonium persulphate to dissolve metals. At another place it has been mentioned that persulphate dissolves zinc by formation of sulphate of zinc and without development of hydrogen. The tests showed that persulphate for etching of zinc clichés for autotypy gives much more regular results than the acids, and that its action approaches that of chloride of iron.

But it has been confirmed that by action of a persulphate solution upon the zinc, a weak development of gas will be observable, even when the solution is made alkaline with ammonia. The latter circumstance seems to exclude the idea that the liberated gas was only hydrogen, originating from the action of the sulphuric acid (formed by voluntary decomposition of the persulphate) upon the zinc. Perhaps the zinc decomposes part of the persulphate, without interfering with the reaction, whereby the persulphate absorbs the hydrogen of the water, liberating the oxygen, as remarked at another place.

Whatever it may be, there is no doubt, that an etching medium, which, like the ammonium persulphate, acts in neutral or alcoholic solutions, and produces only a very small gas development, is of advantage for the regular method of etching and by which in the autotype process the burning in of the insoluble bichromate film for the protection of the drawing against etching, will in all probability become unnecessary. The chromate film, which has become insoluble by light, will alone offer sufficient protection, so that the burning in, so injurious to the zinc, can be dispensed with.

Aluminium is also attacked by the ammonium persulphate in the same way as the zinc, so that, in case that metal should be substituted for the lithographic stone, this etching medium might be the most suitable.

Copper is also attacked by an ammonium persulphate solution without gas development, and much stronger, if made alkaline, so that in many cases the persulphate will replace the chloride of iron.

15. In the positive process upon direct printing paper, the ammonium persulphate is very useful as reducer. As a neutral solution will act too energetically, a weak alkaline solution would be preferable. Namias employs for this a $\frac{1}{2}$ per cent. solution of ammonium persulphate, to which is added 1 per cent. of ammonia. The picture may be subjected to a reduction before or after toning, also after fixing; it is then washed well and in case the picture has already been fixed a bath of from 1 to 2 per cent. of sulphite of soda has to follow.

The application of an ammoniacal solution instead of a neutral one is to be recommended for the reason that the latter will cause only a small precipitate of sulphur.

16. If a print upon bromide paper is to be finished quickly, a superficial washing should be done after fixing and the print should then be bathed for about five minutes in an ammoniacal persulphate solution of 1 to 2 per cent.; the persulphate oxydizes the fixing soda and can hardly reduce the picture during the short duration of action.

The same solution serves also for the removal of the yellow tone or yellow spots, which sometimes will appear on developed bromide of silver prints.

If the picture is to be reduced, the same solution is applied, but without addition of ammonia. Upon platinum pictures the persulphate seemed to have no action.

17. A useful application of the persulphate may be found in the restoration of silver paper that has become yellow by age.

Namias states that a chloride of silver gelatine paper, which became completely brown after keeping it for four months, turned completely white again after a few minutes' immersion in a 2 per cent. weakly ammoniacal, persulphate solution. After drying, the paper was printed under a negative, and he obtained good pictures, although less brilliant than those obtained from the paper in a fresh condition. This loss in strength can be avoided, however, if 2 per cent. nitrate of silver is added to the persulphate solution. Paper restored that way gives just as handsome and good results as when freshly prepared, so that the problem of restoring old useless silver papers may now be considered as solved.

Translated by

HENRY DIETRICH.

PREPARING NEGATIVES FOR PRINTING.

(Concluded.)

IT often happens that, owing to local color, the bright part of a landscape is rendered with much less contrast and sparkle than it should be to represent the view correctly, or even a little extra brilliancy to that existing would be an artistic improvement. In such cases, accentuating the light with crisp judicious touches of lead pencil or color will wonderfully improve the subject, increasing the scale of tone and brightening up the whole production.

A general increase of illumination on masses of subjects can be obtained by a light sketchy stipple, with soft lead pencil, over the part that requires lighting up,

without any, or very little, reference to the details, so long as the stipple agrees in a measure with the character of the portion being treated, and the pencil lines are not hard. At first sight it might be thought that the lines would appear as defects, but they do not do so, the photographic image showing through and between them—a distinctly different effect to that produced by rubbing lead over the part with the finger tip, although the thickness of the depth of lead, so to say, may be the same in both cases. Of course, this penciling must be done on the unvarnished film, which, if too hard and glossy, may be made into condition by rubbing a little finely powdered resin over the surface with a pad of cotton-wool.

We now come to a different kind of doctoring, namely, covering the back of the negative with either tracing paper or varnish, colored or uncolored, and its removal from those parts that require more printing than the rest. On the whole, I give the preference to tracing paper for landscape negatives, and to varnish for portrait ones, but the character of the negatives must determine which to use. Much depends on the tracing paper—a white papier-mineral lends itself best for this purpose, for, when of good quality, the effect approximates very nearly to ground-glass; it also provides an excellent surface for working on with either pencil or color. I have found the best way to attach the paper is with mucilage of gum arabic, clear and free from dirt. It should always be well strained before use. Lay the paper, cut to size, on a clean flat surface, and evenly apply the gum, but not too lavishly; apply the gummed paper to the back of the negative, press it on smoothly, avoiding air bells, and let it dry. When dry, with a sharp knife cut round the portions from which it is desirable to remove the paper, then moisten it with a wet sponge, and in a few minutes the tracing paper can be easily stripped off. Sponge off the gum where the paper laid, and, when once again dry, it will be ready for any other treatment that may be deemed necessary.

Negatives thus prepared must be printed in diffused light, or the edges of the paper will cause defects on the print. Too dense portions of negatives may be much improved by the well-known method of rubbing down with a soft pad moistened with spirit of wine. When the reduction is required with a straight clean edge, a strip of thin cardboard, laid on the negative and held firmly in place, will act as a guide or stencil plate during the process of rubbing, and limit the area of reduction more neatly than would be possible without such aid. Rubbing down will sometimes save a valuable negative that has been accidentally exposed to the light, by having the shutter partly withdrawn in the act of removing the dark slide from the camera or otherwise, but it must be understood to be successful the proper exposure has already been made before the accidental light has had access to it. In developing, the fogged edge must be developed rather longer than the rest, as, after drying, the fog has to be rubbed off with the spirit pad, the proper image will be found intact if somewhat weaker below it, and, with a little penciling and doctoring as already described, can be made to print as well as the uninjured parts. In case of a collodion negative, this rubbing down is, of course, out of the question, and getting out detail from the dense parts by judicious masking is the business of the printer.

In architectural subjects it is often advisable to block out the sky entirely. In doing this it is a good plan to carefully paint round the building with Indian ink about an eighth of an inch wide, and fill up the rest of the sky with black varnish. It is more easy to work the ink than the varnish round delicate tracery and ornamentation without encroaching on the subject; varnish is so apt to spread in an operation of this kind and spoil the outline. Sometimes portions of a building, projecting into the sky—pinnacles and such like—do not have sufficient relief. At the same time, it is undesirable to block out the sky entirely. In this case, the high lights on the pinnacles are strengthened with pencil or color, and the sky immediately adjoining slightly shaded with lead pencil, vignetting it off into the rest of the sky. The introduction of clouds will often be found a convenient method of gaining relief, in cases of this kind, the clouds being painted on the back of the negative.

Sometimes portions of interiors of buildings are so badly illuminated that the detail is not sufficiently strong to print; in such cases the leading lines of light may

be strengthened by pencilling over them, and, when the subject permits, a slight wash of color may be put on the back, where a little additional strength is required.

Sometimes in seascapes the separation of water and sky is not sufficiently defined; we improve this by ruling a straight line where the horizon should be, and softening it off into the sky with a little pencil shading.

It frequently happens in a landscape that a spray of foliage comes in at the top or sides of the picture without any apparent connection with it; in such cases it is advisable to stop them out altogether by color or black varnish according to their size; blurred branches from movement against the sky, are almost always better painted out.

We now come to negatives that have been cracked or broken. One that is merely cracked, or even broken, providing the film is undamaged, may be restored to its pristine usefulness by transferring the film to another plate. A very dilute bath of fluoric acid, a few drops to the ounce of water, will soon cause the film to separate with a little assistance, from its supports, when another piece of clean glass may be introduced beneath it, and the two—film and glass—lifted out together, adjusted to its proper position on the plate, and set up edgewise to dry. If the transference of the film is not desired, the negative may be laid on another piece of glass the same size, and bound together by pasting paper round the edges like a lantern slide; prints from it must be taken in diffused light, and, by preference, with a piece of white blotting-paper laid over to still further modify the light, which should be permitted to fall along the crack, not across it. If the negative is broken into several pieces, a piece of glass the size of the original negative is prepared by coating the surface with a little Canada balsam, and the glass made fairly hot; the broken negative is then adjusted, face upwards, on the balsamed glass, and the pieces pressed into close contact, squeezeegeeing out as much balsam as possible; this is laid on a perfectly level surface and left to harden, the broken piece of negative and its support are then bound round the edges with paper, and the balsam that may have oozed out between the pieces, as on the surface, nicely cleaned off with a soft rag and turpentine; the chipped film is then repaired by stippling with color, and printed in the same manner as a cracked negative.

Collodion negatives are subject to an annoying fault, consisting of vermiculous cracks all over the surface, owing to the contraction of the varnished films. The best remedy is to rub over the surface finely powdered black lead with the finger-tip, which will fill up the cracks and make the negative again useful. Occasionally, in addition to the cracks, the film will leave the glass and rise in ridges. This is remedied by pouring some methylated spirit into a sufficiently large dish, in which is laid a small block or two in the spirit, so that the negatives, placed on them face upwards, will just be above the spirit level. Cover the whole closely down for a little time, when the vapor of the spirit will soften the film, and the ridges will be found to have disappeared. These faults are owing to the unequal contraction and expansion of the varnish and the collodion. The usual method of cleaning a collodion negative is by means of a solution of potassium cyanide, but after this cleaning the negative must on no account be revarnished or the probability is the image will be dissolved partly or entirely, and the negative destroyed. I have now, I believe recapitulated most of the ways and means of preparing negatives for the printer, all of which are or have been adopted successfully at one time or another. It only remains, as it were, to give the finishing touch, for the sake of neatness, by lining and blacking round the edges of the negative. Before varnishing, the size and amount of subject should be decided upon, as giving the most artistic appearance to the print. With the aid of a flat ruler and sharp knife-point, a line is clearly cut in the negative film enclosing the subject. Then, after varnishing (for I consider all negatives worth keeping are worth varnishing, as I have before said), with a ruling pen and black varnish, just outside the scratched line, rule a black line, and fill up the space between the black line and the edge with black varnish. This will give a finished appearance to the print, and much facilitate trimming; it also affords a suitable space for name or number.

SOCIETIES

THE eighth annual exhibition of the Capital Camera Club of Washington has just closed. Over three hundred photographs were shown in all, representing the work of about one hundred Washingtonians. Silver and bronze medals and honorable mention were awarded to the successful competitors, some of whose work was exceptionally good.

THE Syracuse Camera Club is noted as one of the most progressive in the country. It has recently moved into new quarters, and in March celebrated the event by a competitive print exhibition, over eight hundred pictures having been hung. The Club is in excellent condition financially and its new rooms are fitted with a fine collection of modern apparatus. The officers are as follows: H. B. Buell, President; J. I. H. Wright, Vice-President; Dan H. Sweet, Secretary, and J. E. Bierhardt, Treasurer.

THE California Camera Club held its one hundred and eighth illustrated lecture on the 19th of May, the subject being Norway and the lecture being delivered by Frederick I. Monsen. This Club is also in a very prosperous condition and is to be counted in the front rank of those who are pushing rapidly for a grand success.

THE New York Society of Amateur Photographers gave a very successful entertainment and reception on the 27th of April which was fully attended. An interesting programme was presented which was followed by a dance. The entertainment was a very creditable one and will prove of advantage to the Club.

THE Montreal Camera Club has elected the following officers for the ensuing year: George Sumner, President; A. W. Cole, Vice-President; A. Clarence Lyman, Secretary-Treasurer.

At a meeting of the Philadelphia Camera Club held on the 13th of May, the following officers were elected: Thomas S. Stewart, Jr., President; Edmund S. Graf, Vice-President; A. C. Santler, Treasurer; J. Morton Boice, Secretary, and Frederick Pierce, Corresponding Secretary.

One public and several private exhibitions have been held by this Club during the past year and the meeting celebrated the close of a very successful season.

THE Frankford (Pa.) Camera Club held its annual meeting on the 14th of April, and elected the following officers: B. A. Haldeman, President; Dr. Julian T. Hammond, Vice-President; John M. Justice, Secretary, and Harry E. Crankshaw, Treasurer.

THE annual meeting of the Camera Club of the Y. M. C. A. of Troy, N. Y., was held on April 24th, and the following officers were elected: James F. Cowee, President; Joseph McKay, Vice-President; H. R. Mann, Treasurer, and H. G. Thompson, Secretary. The report of the latter showed the Club to be in a very flourishing condition.

AT a meeting held in April the Helena (Mont.) Camera Club elected the following officers: C. F. Pearis, President; Wilson Perry, Vice-President; Miss Maud J. Wilson, Secretary and Treasurer. The Club endeavors to raise the standard of non-professional work and an effort will be made to increase the interest in amateur photography during the summer.

THE annual meeting of the Valley Camera Club of Phenix, R. I., was held on April 13th, and the following officers were elected for the ensuing year: W. E. Smith, President; J. B. Lawton, Secretary, and F. J. Hoxie, Treasurer.

A MEETING of the Akron (O.) Camera Club was held on the 18th of April, and the following officers were elected: Professor C. M. Knight, President; F. B. Hargett, Vice-President; E. J. Hoskin, Treasurer; Miss M. Mitchell, Secretary.

THE following new clubs have lately been organized with the officers named below:

The Y. M. C. A. Camera Club, of Toledo, O.; Wesley Wuerfel, President; George Harsh, Vice-President; Albert E. Bauer, Secretary and Treasurer.

THE New Haven Photographic Society: Dr. W. G. Alling, President; J. R. McCusker, Vice-President; M. C. Ferguson, Treasurer; F. J. Chatterton, Secretary.

THE Central Y. M. C. A. Camera Club, of Toronto, Ont.: H. S. Park, Honorary President; Dr. Price, President; W. R. Moffat, Vice-President; John Powell, Secretary-Treasurer.

THE Genesee (N. Y.) Camera Club: W. E. B. DeVine, President; Owen Scott, Secretary; B. Howarth, Treasurer.

THE Rockland (N. Y.) Camera Club of the Y. M. C. A.: Eugene F. Perry, President; James P. Blauvelt, Vice-President; Herbert R. Marshall, Secretary and Treasurer.

THE Webster Camera Club, of Webster Groves, Mo.: W. A. Sisson, President; F. C. Thompson, Vice-President, and A. K. Prince, Secretary and Treasurer.

THE Y. M. C. A. Camera Club, of Binghamton, N. Y.: Albert B. Brown, President; Arthur B. Hollister, Vice-President; H. C. Price, Treasurer, and E. F. Robinson, Secretary.

THE Pike Camera Club, reported in the May BULLETIN as having been formed in Newburyport, should have been credited to Merrimac, Mass.

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STUDIO WORK.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

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No. 7.

THE POSSIBILITIES OF PHOTOGRAPHY.

THE tremendous advances made by photography in the little more than a half century of its existence, and the rapidity with which its application to different fields of science and commerce has been made possible by improvements in apparatus and the increasing knowledge of its powers and possibilities, tend to indicate its wider use and more general application to the economics of life, and one stands almost lost in wonderment who undertakes to say what it may or may not accomplish in its next half century. It has already become one of the most important factors in recording scientific investigations and visible phenomena. Astronomy obtains by its aid that which the telescope alone could never give. Medicine and surgery have benefited by it probably much more than by any other single invention of the age. Commerce has adapted it to her uses, and goods are bought and sold upon its recommendation. Architects and mechanics by its aid are kept informed upon the progress of their works; builders and contractors fall back upon it to verify their accounts; publishers and advertisers depend upon it to increase the value of their goods and to bring them before the public, while the portrait photographer who (as a class) discovered it, is placidly accepting the situation, and seems, in many cases at least, to be in about the same state of ignorance concerning its scope and possibilities as when he first opened his studio. One of our English contemporaries, in a recent editorial, predicts great things for photography in its application to commercial life, saying: "It is a certainty that eventually we shall have cameras in every home and office, and there is no reason why this consummation should not be reached within the next ten years." The article goes on to predict that the camera will be used in office and counting-room for copying correspondence and all office records; that it will be used by editors, authors, press cutting agencies, and by artists, architects and engineers. That it will be used in the household for no end of purposes, and that for any and all of these numerous applications some simplification of the apparatus and manipulation will probably be worked out, by means of which its advantages will be

easily within the reach of an intelligent office boy without previous knowledge of photography.

Now what a beautiful opportunity is presented to the portrait and view photographer, while all this simplifying process is going on in the commercial world, to brace up and become a little more alive to the opportunities in the midst of which he dwells, and to do some advancing himself. In this age of progress nothing stands still, and the photographer who does not to-day know more than he did yesterday, is losing ground. There is no doubt that there is much more before us in the development of photography than we have left behind, but how is it to be wrought?

Some steps may be discovered by accident, but the solid advance of the science will be by earnest study, constant effort after better things, continual striving to reach a higher plane than we have occupied. This means progress, and as the individual worker advances in proficiency, the possibilities of the science become more apparent to him, and new fields for its application come into view.

The recent tendency among photographers to cultivate special lines of work will help in the general development of the art, and a few more Hollingers, Cores, Robinsons and other specialists will do much to raise the standard and develop the possibilities of photography. Much that is valuable lies thus far undiscovered or not applied, and only waits the proper combination of circumstances and opportunity to thrill the world and make somebody rich and famous. It may be any of us, but it will most likely be he of us who is best acquainted with his business; who knows most of its fundamental truths; who, when a chemical action takes place with which he is not familiar, studies into the matter and finds out the why and the wherefore of it, noting the results of his investigation for use in future experiments.



THE BULLETIN PARTY TO CONVENTION.

AS in previous years, the BULLETIN invites all who intend going to Convention from the neighborhood of New York or who can make New York City their starting point, to join the BULLETIN party, which will be in charge of the editor, and which will leave by the Erie Railroad from the foot of Chambers street, North River, by the 7.30 train, Sunday evening, July 16th. The train is one of the best running out of New York, and the service and accommodation is unsurpassed. It is made up of modern Pullman combination sleeping cars and combination café and smoking car. The train is due to arrive in Jamestown at 7.55 Monday morning. The fare for the round trip from New York and return is \$12, and price of double berth on the train is \$2.50. Any who desire to have tickets and sleeping accommodations procured for this train may do so by addressing W. I. Scandlin, Editor Anthony's BULLETIN, 591 Broadway, New York, enclosing the amount as above. Remittances received up to Saturday morning, July 15th, will be in season, but those who first apply will have precedence in choice of berths. It is expected that the attendance from this part of the country will be larger this year than ever before, and the BULLETIN excursion provides an excellent opportunity for pleasant acquaintance on the way. Don't fail to send your name and remittance early.

Items of Interest

AN interesting decision in regard to the photographing of criminals and placing their pictures in the Rogues' Gallery has lately been rendered by Justice Truax in the Supreme Court. He was asked to grant a writ of peremptory mandamus to restrain the Police Commissioners from taking the picture of one Thomas Joyce and placing it in the Rogues' Gallery, after the said Joyce had been convicted of an assault and sentenced to six months in the workhouse. It being shown, in response, that Joyce had formerly been arrested, and that he was an associate of criminals, the application was denied, Justice Truax holding that these facts were sufficient to warrant the action of the Commissioners. In giving his decision, Justice Truax quoted from Professor Tiedeman's treatise on the limitations of police power, as follows :

"Another phase of police supervision is that of photographing alleged criminals and sending copies of the photographs to all detective bureaus. If this be directed by the law as punishment for a crime of which the criminal stands convicted, or if the man is, in fact, a criminal, there can be no constitutional or legal objection to the act, for no right has been violated."

Justice Truax proceeds to say that under the Consolidation Act of the city, the duties of the police were, among other things, to preserve the public peace, prevent crime, detect and arrest offenders, and protect the rights of person and property, holding that one of the ways to carry out this end is to know who are the habitual criminals, and that the easiest way for the recognition of such is by their photographs, and in view of the preceding, he held that if any wrong had been done the relator, it was in the nature of a libel, for which an adequate remedy at law is provided.

ACCORDING to the reports of the daily press, very extensive preparations had been made to photograph the prize fight, that lately occurred at Coney Island, by electric light, for reproduction in a moving picture machine, and, according to the same authority, the effort was a complete failure, notwithstanding the fact that a very powerful battery of electric lamps was put into position to illuminate the ring.

Mr. F. DUNDAS TODD, editor of the *Photo Beacon*, sailed on the 24th of June for a holiday in Scotland, accompanied by his wife and five children, with the expressed intention of combining a holiday and seeing the condition of photographic affairs in Great Britain. The BULLETIN tenders its best wishes for a pleasant outing, and trusts that Mr. Todd will return in the fall benefited by his rest.

THE following letter from St. Louis will explain itself, and will doubtless be welcomed by the many friends of the Cramer Dry Plate Works throughout the country. They are to be congratulated upon the completion of their factory :

“ST. LOUIS, May 15, 1899.

“TO THE TRADE :

“We take pleasure in notifying our friends and the photographic fraternity that the recent extensive additions and improvements which have been under way for over a year are now practically completed, so that we are in a position to fill all orders entrusted to our care promptly, on receipt of same, with plates of unsurpassed quality.

“Thanking our many friends for their kind forbearance during the time when we were short of goods, and hoping to be favored with their future orders, which shall have our prompt and careful attention, we remain

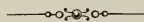
“Yours fraternally,

“G. CRAMER DRY PLATE COMPANY.”



IN view of the fact that kite photography will undoubtedly be experimented with during the coming season more than it has heretofore, Mr. William A. Eddy's method of operation may be of interest.

The camera is pointed at the earth before being sent into the air, and when aloft the shutter is snapped by a very thin line, distinct from the kite cable, attached to the lever. The camera itself is rigidly placed in a fixed position inside an enclosing frame, and is suspended about 100 feet below a group of tandem kites, which radiate or branch from the main line. The kites are sent up one at a time until a sufficient number are aloft to sustain a weight of 70 pounds, when the camera is added to the outfit and the shutter released at the pleasure of the operator. There is, undoubtedly, much to be learned in this line of work, and the BULLETIN will be glad to have the results of experiments carried on by its readers during the coming summer. Kite photography is bound to be an important factor in military movements of the future, and we believe that effort made in this direction may be made of positive value in many directions.



THE sixth annual convention of the Indiana Association of Photographers is announced to be held in March, 1900, at Indianapolis. A very interesting list of prizes and awards is published, covering a large number of classes. Full information and entry blanks may be had on application to W. O. Nicely, Secretary, Bloomington, Ind. It is none too early to look into this matter and lay plans for exhibit.



A FULL account of the Convention proceedings, together with speeches and copious notes of the talks and criticisms before the school of photography, will be published in the September BULLETIN. An extra edition of the Convention number will be printed as usual, and we would remind our readers that if extra copies of this number are wanted, they will do well to notify us in advance of publication, as if the edition becomes exhausted before all wants are filled, it will be impossible to supply them.

SIR NORMAN LOCKYER has lately been experimenting, and very successfully, with flexible film, with the idea of adapting it to spectroscopic photography. The large concave Rowland grating which Sir Norman Lockyer is now using for his solar spectroscopic photographs has 20,000 lines to the inch ruled on its surface, and is of $21\frac{1}{2}$ feet radius, giving a spectrum of 30 inches long. The focal plane of this grating is of necessity considerably curved, in fact the plane of accurate definition at the edges of the field is about 0.5 inch in front of the similar plane at the center. It is, therefore, impossible to get a sharp photograph of the whole spectrum on a glass plate, in fact not more than 18 to 20 inches of the spectrum can be brought into focus on the same plane. This difficulty is of course got over by the use of a flexible film, which can be bent to the curvature of the field. A negative has been made with this Rowland concave grating which must be the longest solar spectrum photographed at a single operation. It is 30 inches long, and shows the arc spectrum of iron with a comparison spectrum of the sun from wave length 3,600 to 5,200. Sir Norman Lockyer also hopes that by using films, instead of glass plates, at the next solar eclipse, he will be able to obtain a greatly increased number of photographs, owing to the rapidity with which the film can be shifted in the short space of time available for photographic operations. At the last eclipse the photographic work was concentrated on obtaining a series of photographs of the chromosphere, both about the time of beginning and end of totality. By careful drill Mr. Fowler and Dr. W. J. S. Lockyer were both able to secure ten photographs at each of these important periods, the time occupied in making each series of ten exposures being twelve seconds.



PRESIDENT GUERIN TO THE PHOTOGRAPHERS OF AMERICA.

DON'T read this, you who regularly attend our Photographers' Association of America conventions; to you I have nothing to say; you are already on the smooth road of success. But to you who never attend our conventions, to you who are still on the rocky up-hill road of trying to make a good living by the aid of photography, to you I take this opportunity of saying a few words. This is an age of competition, and competition is based on the time-proven theory of the "survival of the fittest."

The one who buckles to with the earnest desire to one day be "somebody" in our profession must acquire knowledge by paying special attention to details, and if he has not the natural gift of originality must try and imitate those who have. Remember that a good copy is better than a bad original. By attending the Convention you will have an opportunity of comparing your work with that of others, and you will see that no matter how well up you are in the business you can always find place for improvement. Everybody who

has ever attended our Conventions will uphold my assertion that every convention held yet has been of inestimable value as a teacher to the individual attending. Our Convention is a true mirror of the progress in photography on this continent. In this age of perfection and competition there is no middle way of success. It is all success or all failure. Which will you choose? Would it not pay you to expend a few dollars which will enable you to defray the expenses of a very pleasant lesson by attending our Convention? I have reliable information that the American Aristotype Company have arranged with Professor Griffith to give some of his inimitable lectures on Art. I, for one, must acknowledge that I have gained more information from him in the few lectures that he has delivered at our conventions recently than I have at all prior conventions that I have attended. I therefore take off my hat to him, as I feel that he has taken me from darkness and given me light.

We also have Professor Taft, of Chicago, an artist of renown and ability, who is spoken of very highly by members of our craft, to criticise our exhibits.

Professor Lawrence, of Chicago, who makes a specialty of large flashlight pictures, 28 x 40, will have an exhibit, and will also make a picture of the Convention by flashlight. It will be worth while going to see his pictures, even if we had not so many other attractions. The flashlight is the coming light for photographing large halls, assemblies, groups, machinery, etc., and you will have an opportunity of seeing how Professor Lawrence utilizes it in his business.

You know very well, if not by actual experience at least by hearsay, how ably pleasure is combined with useful information at our Conventions. You need to get away for a few days from underneath that skylight of yours to have a good time with your fellow craftsmen as much as you need a few pointers to awaken you from your photographic lethargy, to open your eyes to what has happened in the photographic world since you last attended a convention. It will do you good morally, physically and mentally to get out and mingle with your fellow workers. Remember the "stay-aways" are generally the "know-it-alls," who in turn become the "has-beens," who are easily left behind or outdistanced by the more alert wide-awake workers who keep their eyes and ears open, and, from catching a glance here and a sound there, build up a reputation that knocks the "regular stay-at-home" fellow out of the ring in one round and dumps him squarely on the ground of oblivion. Which class do you belong to? Can you afford to stay away from the splendid opportunity to see, hear and learn and have a jolly good old time into the bargain? You might just as well make up your mind right now to be on the side of progress and to be among those who participate in the onward and upward march of photography. Come one, come all, let us make this Convention the banner one, to which we shall all be able, in after years, to point with pride.

F. W. GUERIN,
President.

IS PHOTOGRAPHY AN ART?

BY JAMES GALE.

THE criticism of pictures is one of the absurdities of opinion. Criticism by experts is seldom assailable; but thousands of people see a picture without the slightest idea of what it would convey, without the slightest pleasure being conveyed to them by it, or without any definite idea of its merits.

For such persons there is one opening—incapable of detecting a beauty, they look for a fault. On these apparent blemishes they are learned, and talk confidently. Unacquainted with every phase of art, they have no idea of masterly as distinct from slovenly work. Too matter-of-fact to know a spade as anything but a spade, they prize that knowledge beyond any appertaining to the ideal in life, for this they hold valueless.

Now, to have photographs judged by these critics is depressing. A work in which intent is evident, even though unrealized, is better than commonplace successful manipulation, where all thoughtful motive is absent. To many people the sharpness and high gloss, or, as some will say, clearness, of a photograph are more prizable than the poetry and feeling of the subject; to them everything should be on the surface and be seen at once. No place can be found for the imagination, which in a true picture is its greatest charm.

In the early days of photography (early, that is, by comparison with the great strides photography has made during the last ten years) a series of pictures by Mrs. Cameron were causing much controversy. They were described as lacking the qualities which were then considered essential to pictorial photography, and the result of the use of imperfect materials and unsuitable lenses. If this was the case—and in some small degree it may have been so—we are bound to admit, having seen work so admirable, and in some ways never since surpassed, that such use was deliberately made with artistic intention. The tools which serve our purpose are perfect, or valuable, only from their adaptation to the end which we have in view.

Without artistic intention there can be no art. The artist in photography is that one who, with this intention, deliberately sets to work to cause the effect of his craft to take another direction from that which it would take in the hands of the ordinary mechanical user, be the skill ever so great with which the latter employs his instrument in deriving from it the fullest mechanical advantage. The first, however, works as an artist, from the fact of his artistic intention. If he is successful, he produces a work of art.

It is from such points of view that some of the most artistic photographs which we see are often so little like a photograph. To produce work of this character has been stigmatized by some as nothing but imitation of some other art. But this is not so. The characteristics of photography are not those only by which it was first distinguished, when the scientific precision produced by a lens was the one thing aimed at. There is no limitation in the use of the term photograph, so long as the effect is produced by the action of light.

The world is, I grant, overburdened with mechanical reproductions of scenery, taken without a single artistic thought or impulse. Still, there is no reason why a photograph should not be as well a picture in monochrome. When this is achieved, photography is raised to an art.

SIXTH ANNUAL CONVENTION OF THE PHOTOGRAPHERS' ASSOCIATION OF MISSOURI.

TO be held in St. Louis, August 22, 23, 24, 1899. Officers: President, G. W. Curtiss, Kansas City; First Vice-President, F. M. Truby, Boonville; Second Vice-President, Charles A. Steward, Carthage; Treasurer, Miss Belle Johnson, Monroe City; Secretary, A. S. Robertson, St. Louis.

LIST OF PRIZES.

Grand Prize.—Open to the world. Three photographs, 14 x 17 or larger, framed optionally. First prize, bronze figure.

Genre Class.—Open to the United States. Three direct photographs, any size. First prize, gold medal; second prize, silver medal.

Class A.—Eight pictures, 10 inches or larger. Portraits exclusively. First prize, gold medal; second prize, silver medal; third prize, bronze medal.

Class B.—Six Paris panels, twelve cabinets, portraits exclusively. First prize, gold medal; second prize, silver medal; third prize, bronze medal.

Class C.—Twelve portraits, cabinets, or larger. Competitors must be from towns of less than 10,000. First prize, gold medal; second prize, silver medal; third prize, bronze medal.

Class D.—Twelve cabinets or larger, portraits only. Competitors must be from towns of less than 5,000. First prize, gold medal; second prize, silver medal; third prize, bronze medal.

Class E.—Eight pictures, interior or exterior, 5 x 7 or larger. First prize, silver medal; second prize, bronze medal.

Class F.—Amateur Class. Six pictures, any size, any subject. First prize, silver medal; second prize, bronze medal.

RULES AND REGULATIONS ADOPTED BY COMMITTEE, AND WHICH WILL BE STRICTLY ADHERED TO, NO EXCEPTION TO ANY EXHIBITOR.

First.—All competitors must be members of the Association, and in good standing.

Second.—No exhibitor can compete in more than one class, except Genre.

Third.—Photographers outside of Missouri can compete in Grand and Genre classes. No fee required.

Fourth.—Any photographic paper, mounts, or frames may be used that the exhibitor may select.

Fifth.—Glass over pictures will not be allowed, excepting in Grand class.

Sixth.—All photographs exhibited must be made from negatives since August 12, 1898.

Seventh.—Rating in all classes, excepting E and F, to consist of the following points: Ten for lighting, ten for posing, and ten for chemical effect.

Eighth.—Classes E and F to consist of the following points: Ten for composition, ten for lighting, and ten for chemical effect.

Ninth.—Three judges, who are not exhibitors, will be elected by the Convention to judge the entire exhibit.

Tenth.—All exhibitors must have their applications forwarded to the Secretary by August 18th, as positively none will be accepted after.

Eleventh.—Have your boxes screwed instead of nailed, with your home address on the under side of cover for the return of pictures. Inclose screw eyes and cord.

Twelfth.—Application for space for exhibits must be made to the Secretary before August 18th, and all exhibits must be delivered in St. Louis by August 20th, addressed to A. S. Robertson, Secretary, P. A. of Missouri, Exposition Building, St. Louis, Mo., charges prepaid.

Thirteenth.—Initiation and dues, \$3. Annual dues, \$1.

Fourteenth.—Exhibitors must send their pictures, as none will be received and placed the day of Convention.

Fifteenth.—Exhibitors will not be allowed to remove pictures from hall until close of Convention.

Sixteenth.—No manufacturer or dealer can do business on Convention floor except floor space or desk room is taken.



THE KEEPING OF DEVELOPERS.*

By C. H. BOTHAMLEY.

FEW subjects are of more direct practical interest than the behavior of developers on keeping, more especially after they have been made up into solutions. The matter is particularly important to those who have only to develop a few plates from time to time, for nothing is more tedious and uninteresting than the frequent making-up of small quantities of solutions. It also affects the worker, whether professional or amateur, who is continually developing comparatively large numbers of plates, because it determines how much developer he can advantageously make up at once.

In the first place, it is our experience that, as a general rule, developers can be kept in their original unopened bottles for long periods of time without any sensible deterioration. The reason is that the manufacturers take care to make the packages practically airtight, and, in this connection, it may be well to point out that cardboard boxes cannot afford such efficient protection as glass bottles. Tins, on the other hand, can be made airtight without any particular difficulty.

When once the packages are opened, the conditions are altered, and it requires some little skill and trouble to make them airtight again. Fortunately, however, some of the most useful developers, such as hydroquinone, metol and ortol, can be kept for a long time without any injurious amount of change in bottles recorked with good, soft ordinary corks fitting well into the neck of the bottle. Pyrogallol, unfortunately, is very liable to alter, even in the solid state, and it is more satisfactory to dissolve up at once the whole contents of a bottle. If, however, this cannot be done, the cork should be well covered with melted paraffin wax. Amidol, too, alters somewhat readily, but, as the solution alters still more readily, it is best on the whole to keep it in the solid state, and to get an india-rubber cork for the bottle containing it.

Developers in solution show very marked differences in their liability to alter, just as they do in their tendency to produce stains, but the two are not necessarily connected, at any rate, so far as the property of staining gelatine films is concerned.

In considering this question, it is well to bear in mind that the alteration is in the main, if not altogether, due to the action of the air, and, consequently, what we

**Photography*, June 1, 1899.

have to aim at is either to exclude the air completely, or to make the conditions such that the specific action of the air is retarded or prevented altogether.

The complete exclusion of air is impracticable, for, unless the solution completely fills the bottle, which cannot be the case after part of it has been used, there must always be some air above the solution in the upper part of the bottle. All we can do, therefore, is to prevent any circulation of air in and out of the bottle, which would constantly bring in fresh air to act upon the solution. How far we can succeed in this depends, of course, on the perfection or otherwise of our means of closing up the neck of the bottle. The ordinary methods may be arranged in the following order of merit, the best being first: India-rubber corks, good glass stoppers, good ordinary corks, bad glass stoppers. Photographers might add another proverb to those that their grandmothers taught them: "Better is a cheap cork that fits than a dear glass stopper that does not."

Coming now to the conditions that retard or accelerate deterioration, the first point of importance is that alteration takes place most readily if the solution of the developer is alkaline, and least readily if it is acid. It is for this reason that pyrogallol is always kept in an acid solution of one kind or another. Sulphites, which are now so commonly used as preservatives, act either because they are acid, as in the case of the metabisulphite, or because they absorb the active constituents (*i. e.*, oxygen) of the air, and so prevent its acting on the developer.

Our own experience is that the metabisulphites are far and away the best preservatives of pyrogallol and other developers, and this is doubtless because they act in both of the ways just referred to. Sodium sulphite, which is so frequently used with developers other than pyro, is an oxygen absorbent, but is not acid. On the contrary, it is an alkaline salt, even when pure. Usually it is not quite pure, but contains a small quantity of sodium carbonate, and this, though in good samples the amount is small, nevertheless makes the solution distinctly alkaline, and promotes oxidation by the air. There is no reason at all, so far as we are aware, why metol or hydroquinone should not be made up with metabisulphite, instead of sulphite. If sulphite is used, and certainly it is specified in most formulas, care should be taken that it is of really good quality. The best plan of all is to decompose any carbonate that may be there by adding to the solution a small quantity of metabisulphite, or of dilute sulphuric acid. In order to find out whether any carbonate is present, you obtain from a dealer in chemicals a small quantity of the indicator called phenolphthalien, and dissolve it in a mixture of equal parts of alcohol (spirits of wine) and water in the proportion of 1 grain of phenol-phthalein to each fluid ounce of the dilute alcohol. Add a small quantity of phenol-phthalein solution to about an ounce of water in a tumbler standing on a sheet of white paper, and then add a small quantity of the sulphite solution. If any sodium carbonate is present, a violet-red coloration will be produced. Now to the bulk of the sulphite solution add a small quantity of dilute sulphuric acid, or of metabisulphite solution, shake well, and repeat the test. If the violet-red color is still produced, add a little more sulphuric acid or metabisulphite, and test again. As soon as the sulphite solution ceases to produce the coloration, all the carbonate has been decomposed, and solutions of developers made up with sulphite solution treated in this way will show keeping qualities distinctly superior to those made with the ordinary sulphite containing carbonate. Another plan for reaching the same end is to weigh out, instead of every ounce of sulphite that is required by the formula, three-quarters of an ounce of sulphite, and a quarter of an ounce of metabisulphite, or the same proportions with smaller quantities.

Referring now to individual developers. Pyrogallol in solution with potassium metabisulphite (10 per cent. of each) will retain its developing power practically unimpaired for months, even in bottles only partially filled. Hydroquinone and metol, or a mixture of the two, will remain practically unchanged for quite a long time when made up with ordinary sulphite, and for a still longer time with sulphite prepared in the manner described above. A change of color to yellow or orange may be disregarded. Ortol, too, made up with metabisulphite, retains its developing power, and does not become discolored after several months, but amidol alters somewhat rapidly in solution, and, therefore, as already stated, is best kept in the solid form.

DEVELOPING AND FIXING OF BROMIDE OF SILVER DRY PLATES IN ONE SOLUTION.

BY P. HANNECKE.

IT is an old rule that developer substances should be kept strictly separated from the fixing baths, as fixing soda will act injuriously, cause fog, and sometimes destroy the whole operation. On the other hand, it is known that certain developers, like metol and ortol, will admit a small addition of soda, and that by its use a greater clearness of the negative is produced.

I tried to add to ortol developer a larger quantity of fixing soda, but without success. I tried, also, other developing substances in various compositions, but with the same negative result. Only one solution proved an exception to this rule, and that is pyrocatechin.

For experiments in the chemical developing and fixing in one solution, it is, above all, important that the developer to be used is so composed that it has the property of developing the latent picture rapidly and clearly. The reducing action must not be prejudiced by the large quantity of the fixing soda which is present (and which is a condition for the complete fixing out of the negative).

For the combined process in one solution, only very energetic developers come into consideration, particularly solutions containing caustic alkalies.

It has, however, been shown that with the different developers containing caustic potash, the action of the fixing soda was always the leading one, except in the case of pyrocatechin. If the quantity of the fixing salt was reduced, so that the developer could act better, no complete fixing out of the negative took place.

All developer formulas containing caustic alkalies have the defect that the gelatine film of some plates will frill easily and peel off the glass. The cause of the frilling is in the extremely high caustic potash quantity of the developer.

E. Vogel has found that with pyrocatechin for production of a rapid developer, a surplus of caustic potash is not necessary, but only so much of the latter as is sufficient for the formation of the di-caustic salt, and that the caustic potash quantity can be reduced still further, and that even then a still extremely rapid acting developer is obtained. I recommend the following composition of a concentrated pyrocatechin developer, which, for use, is diluted with water :

Pyrocatechin.....	7 grams.
Caustic potash.....	7 "
Crystallized sulphite of soda.....	30 "
Water.....	75 cubic centimeters.

This form of the pyrocatechin developer gave excellent results for developing and fixing bromide of silver gelatine plates in one solution.

For the combined developing and fixing, it should be considered that plates of different manufacture are also of different composition, and that some kinds will fix very slowly.

For this reason, one and the same developing and fixing bath is not suitable for every plate.

It may be remarked that the time of exposure is the same as in the separate process of developing and fixing. The developing-fixing solution can be used a second time without detriment to the process.

That the combined process requires such a short time is explained, if we consider that we have here a very energetic developer, with a fresh, strong fixing salt solution.

This developer can also be used for chloro-bromide of silver diapositive plates and bromide of silver papers.

Translated by

HENRY DIETRICH.

THE LATEST AND BEST.

WE are told that should a "hustling" photographer in Germany advertise his products as the best made in his locality his competitors can drag him before the courts, and should a body of experts, appointed for the purpose, fail to establish his claim, the poor man is heavily fined and probably imprisoned. Here, in this free country, we can say that the coming Convention at Celeron is going to be the best one ever held without any thought of interference. But seriously, if we were hedged round about with German laws we would make the same announcement with the same disregard of consequences. The mere fact of its being the latest gives it a strong claim to being the best; for is not photography advancing? If the exhibit shows all that is latest and best in this advancement, can one not learn something of profit from it? Aside from this argument, we claim it is going to be the best, from the fact that the work of providing instruction and recreation has been planned with the utmost care, and has been carefully worked out in all its details.

The railroad fare will be one and one-third fare on the certificate plan from points east of Jamestown, and one fare for round trip from points west. All ticket agents in the territory of the passenger associations have received their instructions, and your local agent can supply you with needed information. See large posters (at all stock houses) for description and locality of the following hotels. It is the Secretary's business to furnish information. He is put in office for that purpose. He is at your service.

Very truly yours,

GEO. B. SPERRY,

Secretary Photographers' Association of America,
Toledo, O.

LIST OF HOTELS WITH RATES.

The Greenhurst, P. O. Address, Jamestown, N. Y.....	\$2 50
Kent House, Lakewood, N. Y.....	2 50
The Waldmere, Lakewood, N. Y.....	2 50
Saratoga Cottage, Lakewood, N. Y.....	1 50
The Cowing Cottage, Lakewood, N. Y.....	1 50
Humphrey House, Jamestown, N. Y.....	3 00
Sherman House, Jamestown, N. Y.....	\$2 00 to 3 00
Everitt House, Jamestown, N. Y.....	1 50 to 2 00
Hayward House, Jamestown, N. Y.....	1 50

THE PRINTING IN OF CLOUDS IN CONTACT-PRINT- ING UPON BROMIDE OF SILVER GELATINE PAPER.

By APOLLO.

THE ordinary process of printing in clouds, when printing-out papers are employed, is that the landscape, whose sky is covered, is printed first, that the printed part of the paper is covered with a piece of cloth upon the glass of the printing frame, and that then the clouds are printed in on the still unexposed part of the paper.

By using bromide of silver gelatine paper, or any other developing paper, this method is not applicable, because nothing can be seen of the picture before development, and the clouds could, therefore, not be put into the correct position. In printing or enlarging upon bromide of silver paper in the camera a process is applied in such a case which will do away with those difficulties. The landscape is first printed alone, covering the sky; the picture is developed and washed, then it is fastened again upon the easel, and the sky is exposed. This method is very convenient, as the picture can be seen after development, which admits a correct adjusting of the cloud negative. For contact printing this is, however, not applicable, because the wet print and the cloud negative would have to be brought together, and would lead easily to a destruction of the latter. To escape this danger a little artificial trick has to be employed, by putting between paper and cloud negative a sheet of celluloid or of glass-clear mica. The sheet should be a little larger than the film to prevent the paper from getting wet. When printing the landscape negative the sky may be covered as described, *i. e.*, covered entirely, or it may be protected against light by moving a piece of cardboard up and down over the cloud part of negative during exposure. The latter method is to be preferred generally, producing a soft line between landscape and clouds.

After the landscape has been developed to the required strength, the developing solution is washed carefully from the print without putting the latter in an acid bath, because the bromide of silver paper, which, in consequence of the action of the developing solution and the moisture adhering to it, has become less sensitive, would suffer still more in sensitiveness. The celluloid or mica sheet is then put into the tray in which the print had been washed, and is put in contact under water with the film side of the paper. If the edges of the paper and of the sheet of celluloid are pressed together and taken out of the water, both surfaces adhere to each other. Bubbles are easily removed by pressure. Both surfaces, in close contact, are now placed on a piece of blotting paper, face downward, and the surface of the film is dried with a soft piece of cloth and blotting paper. Thereupon the combined surfaces, with the film downward, are laid upon the cloud negative, and the whole is exposed once more. It is unnecessary to cover the foreground if the second print is developed with a cotton tuft, and the action of the developer is restricted to that part of the print upon which the sky has to appear. This is done best by laying

the bromide paper at the bottom of a tray, and if the tray is held slanting, with the sky of the picture towards the lower end, the local development can be done conveniently, and the horizon line can be approached as close as it may appear to be necessary. The film is, of course, stripped from the bromide of silver paper after exposure of the cloud part. The whole process is very simple and safe.

Another method is the following: A diapositive is made from the landscape negative of equal size (covering the sky, of course), and in the same way so much is printed of the cloud negative as is to be introduced into the landscape, upon a diapositive plate, covering before, of course, the corresponding part of the landscape. When finished and dried both diapositives are put on top of each other, the cloud picture behind the landscape picture, and a negative is made from the combined diapositive in the usual way. If care is had not to expose the sky too long and to develop too strong, the final negative will form a complete whole, after which any number of prints can be made. This method offers the advantage that corrections or retouchings can be made upon the diapositive.

Translated by HENRY DIETRICH.

IMPORTANT PHOTOGRAPHIC PROBLEMS THAT REQUIRE INVESTIGATION.

BY HERBERT S. STARNES.

THE following paper, read before the London and Provincial Photographic Association, opens a field for investigation that may be profitably studied by scientists on both sides of the water.—[EDITORS.]

After looking at the marvelous results of modern photographic work, one would almost wonder that there could be such things as any problems requiring investigation.

The speed and quality of our plates, and the perfection to which the manufacturers have brought their printing papers, are such that one can hardly realize that, from a scientific point of view, such a small advance has been made in our knowledge during the past fifty years upon such subjects as the action of light in the formation of the photographic image, or of what that image consists, and the question arises: "Are our photographic societies, especially the parent society, carrying out their duties when they allow such important problems to drift on year after year without, at least, some slight attempt at a systematic organized investigation on a thoroughly scientific basis?"

Of late years an attempt has been made to claim for photography a place among the arts, and to ignore its scientific basis almost entirely by placing the emulsions and printing papers on the same level as the colors of the artists' colorman.

Artists contend, and contend most truly, that photography is not, and never can be, an art. There is as much difference between photography and art as there is between the verbatim reports of our police courts and those marvelous examples of literature in which Sir Walter Scott threw a halo of romance over Scotland and her people. It is

true that occasionally the police court will give us a character that, for true nobility and grandeur, the novelist cannot equal. So the camera will now and then produce an effect of light and shade that no artist could ever compete with, but in both cases the bulk of the pictures of life from the police courts and the representation of Nature in our photographs have too heavy shadows.

Art is nothing more than dreamland, and an artist is a man who reproduces in his waking moments, not what he really sees, but what appears in the fantastic dreams of his imagination. But photography has done a great work by dragging art out of the sea of falsehood in which it was engulfed in the past. Before the days of photography few people really used their eyes—they accepted the artist's false drawing as correct; but directly the photograph began to teach the world the true representation of form, then began a silent revolution in the art world, and there is no doubt that, from an educational point of view, photography has done a great work, because it has not only taught the artist correct drawing, but it has trained everyone, from the board school child upwards, to use their eyes and detect the difference between the true and the false in the representation of form.

We will now look at photography from a more scientific standpoint, and, first, as to "light" itself in connection with its action on the photographic plate according to the absorption theory of light. In passing through a transparent medium, the molecules of the latter take up the waves of certain periods, and the remainder pass through, giving the color of the medium. Now, if we take a plate coated with a slow emulsion (one that used to give a good ruby color in our old emulsion-making days), one can understand that the blue and more actinic rays taken up or absorbed in the film have been converted into the light action that has taken place on the particles of silver bromide, and that the slow vibrations are allowed to pass through, thus giving the ruby color transmitted through the film. In this case theory seems supported by practice; but how about a rapid emulsion that transmits blue rays? The molecules of this film have taken up the waves of the slow period, and yet we obtain a much greater speed of plate, although the more rapid vibrations of the blue or actinic rays have passed through the film. How can we explain these slow vibrations, absorbed or taken up in the film, acting more rapidly on the particles of silver bromide?

When we photograph the spectrum, we have even greater difficulties to explain. If we throw a spectrum on a screen, and look at the blue portion through a piece of blue glass, we find that the glass stops those rays very little; in other words, it is transparent to them. And yet we know that, if we take a rapid plate which transmits blue rays, the blue rays in the spectrum to which the plate ought to be most transparent have been most active in their action on the silver bromide particles. Someone may say that it is because their action is based on a similar law of vibration to that of a tuning-fork, which will communicate its vibrations to another of the same note. But, if

that is so, why do not the red rays of the spectrum act more strongly on a slow film transmitting red or ruby rays than those at the blue end of the spectrum? I think you will agree with me that we have here a problem requiring investigation.

I now come to the question of the action of light on chloride of silver, on which are based our printing-out processes. The first thing we want to know is, of what does this photographic image consist? If we take some pure chloride of silver with a proper excess of silver nitrate, and expose it to light, we will find that it will assume a slate-blue tone and refuse to bronze; and, if it is treated with hyposulphite of soda, it will be almost entirely dissolved away. So our photographic image is not metallic silver from the reduced chloride of silver; indeed, the only part the chloride seems to play is that of an accelerator in the formation of the image.

But, if we add some organic matter to the chloride of silver and expose it to light, we shall find that it darkens usually to a dark-brown hue, and then becomes bronzed, which color is comparatively unaffected after fixing. This shows that the image consists of silver combined with colored organic matter. We now want to find out how much silver there is in this compound.

I think the best way to do this is to take a sheet of albumenized paper, and, on sensitizing it, we shall find that it will take up about 28 grains of nitrate of silver. We will then expose it to light until it darkens all over to just short of the bronzing stage. Then, if we treat it as an ordinary albumenized paper print, we shall find in the washing waters about 14 or 15 grains of the silver, in the fixing bath another 10 grains or so; in the washing water, after fixing, about 2 grains, and in that blackened sheet of paper, measuring 23 by 17 inches, there will be barely a grain of silver left in the deposit.

That being so, can we call it a silver image at all? The fact appears to be that it is colored organic matter produced by the action of light on the silver in which it had previously been in combination. And that, after the formation of that colored deposit, about 97 per cent. of the silver can be removed, although the whole 100 per cent. was necessary to produce it. If this is so, the next question is, What is the action of the gold of the toning bath? Is the gold simply deposited on the organic matter forming the image, or does it keep some of the silver from being removed in the hypo bath?—in other words, is the greater permanence of a gold-toned print due not only to the presence of the gold deposit, but to a locking-up (so to speak) of some of the silver as well? I think this is probably the case, and that some of the subchloride of silver is formed into an insoluble hyposulphite of silver, which is not redissolved in the excess of hyposulphite of soda in the fixing bath.

I think the following experiment will show this. If we allow sulphuretted hydrogen to act on a print, it will at first slightly darken the image until the bleaching of the organic matter commences. This same darkening action by sulphuretted hydrogen takes place on subchloride of silver that has been treated with hyposulphite of soda.



PHOTOGRAPH BY PACH BROS., N. Y.

STUDIO WORK.

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As far as the permanence of the image is concerned, this extra silver is of course an advantage, but, unfortunately, I have found that the yellowing of the whites in old albumen prints is, in many cases, due to their having been in a toning bath. The gold prevents the whole of the silver being removed by the hypo from the white parts of the print, and the sulphuretted hydrogen in the atmosphere, slowly, converts this silver into a yellow sulphide. If you will make the following experiment you will find that this is so. Take two pieces of sensitized albumen paper, and, without any exposure to light, wash them to remove the free silver nitrate. Then soak one piece in a toning bath for ten minutes, then fix and wash both pieces in the usual way. Now, if you expose those two pieces of paper to the action of sulphuretted hydrogen, you will find that on the one that has been in the toning bath there is a formation of yellow sulphide of silver, showing that the gold had prevented some of the silver being fixed out in the hypo bath, whereas the one that had not been in the toning bath has kept its purity of color.

We often see in the text-books that it is best to tone before fixing; but if the gold prevents the whole of the silver being removed from the whites of the print, and is the cause of the faded yellow photographs we so often see, would it not be better to fix first, to remove the silver, before depositing the gold on the image?

I need hardly point out what an important matter this is to the professional photographer, and what is required is for somebody (say the London and Provincial Photographic Association) to start a regular systematic and scientific investigation into the whole subject; because, after all, to get the best results, we must have a printing-out process.

Photographs by blind processes requiring development, or semi-blind, like platinum, are very fine when everything is just right. But the waste of material is, and must be, something enormous, for the professional man to turn out only the very best work.

So far I have only spoken about light and the visible photographic image. I now come to the subject of the latent image requiring development. We will take the old wet-plate negative first. Here we have a collodion film, mainly on the surface of which are particles of bromide and iodide of silver, with an excess of free silver nitrate. After exposure to light, development causes a building up from the free silver nitrate of an image upon the particles of silver bromide which have been acted upon by light. It seems to me that the sub-bromide theory explains this action very well, although even in this case we find that the physical characteristics of the film have an important bearing on the speed of the plate, the high or low-temperature cotton, and the amount of alcohol used in the collodion, all having a controlling action.

But, when we come to consider the dry plate with alkaline development, all the old theories are topsy-turvy directly. Everything is on an entirely new basis. So far as the particles of washed silver bromide are concerned, the alkaline developer will reduce those which

have not been acted upon by light as rapidly and perfectly as those which have been. Then we have to explain reversal of the latent image. It is of no use guessing that the action of light is a chemical, a physical or an electrical one, unless we can explain reversal as a natural sequence. We have to explain, first, a latent negative image, then a latent positive one, then a visible negative deposit. We have here no building up of an image from the silver in other parts of the film. Every particle of washed silver bromide imbedded in the film of gelatine or collodion has to act on its own account. It has first to be bound up or protected from the action of the developer by the film. If it were not for this protection by the gelatine, dry-plate photography would be an impossibility with alkaline development.

What the actual momentary action of light on a particle of silver bromide is, it is almost impossible to say. All we can really say is that, by some means, the protective property of the gelatine over it has been destroyed, and the developer is able to reduce it. As many of you know, my own impression is that there has been a vibration of the atoms of bromine and silver sufficient to destroy the protection of the gelatine surrounding them, but not sufficient to free the bromine.

If the light action is continued, we obtain reversal—*i. e.*, something has occurred to again prevent the developer reducing that particle of silver bromide to a metallic state. It is no longer a question of the physical protection of the gelatine; that has already been destroyed. What I believe does take place is a chemical action, *viz.*, a reduction of the particle to a sub-bromide. The over-exposure to light, producing a continued vibration of the atoms, has caused the liberation of the bromine, which combines with the gelatine immediately surrounding the atoms of silver, and then this bromine acts as chemical restrainer or protector against the reducing action of the small amount of the developer that is able to soak into the film, and thus we obtain reversal. Of course, the reason we cannot get the amount of density on an over-exposed plate is because there has been a reversal of some of the particles of silver bromide. The silver is in the film to be reduced to a metallic state, if we could only clear the free or liberated bromine out.

There are a great number of other problems requiring investigation, but I will only refer to one, which may be taken up by those who are interested in the pictorial aspect of photography rather than the chemical.

Although photography can never be an art, it does not follow for one moment that it will not produce a pleasing, and even artistic, representation of Nature. I do not mean the miserable, dull, gloomy, depressing examples found in our exhibitions during the last few years. For instance, the Salon would make a most suitable meeting-room for a club of undertakers—that is, if the average type of female beauty exhibited in the portraits did not scare the members away. To see these exhibitions, one would think there was no such thing as light and sunshine. What we want, for a change, are pictures with a mass of light half-tones, and with only a few intense shadows to give brilliancy. Most photographs suffer through the darker half-tones being too heavy. The best way I can see at present to get over the difficulty is to develop only to that point where the deepest shadows in the negative would remain clear glass when fixed, and then intensify the image heavily. What we want is to raise the scale of half-tones in the print away from the deepest shadows.

THE FIRST PETZVAL PORTRAIT OBJECTIVE.

BY DR. J. M. EDER.

SOME time ago I called attention to the fact that Petzval's first portrait objective (1841) still exists. This historically remarkable objective was dedicated by Herr Ritter von Voigtlander to the museum of Austrian labor in Vienna. It is preserved in its original form. The whole apparatus presents a pasteboard box (Fig. 1), which, at the narrow end, carries the objective, and at the broader end a holder, with circular opening, of 97 millimeters diameter. The apparatus is held by a screw. The front lens of the objective has a diameter of 39 millimeters; the effective opening is 38 millimeters; the focal distance = 15 centimeters.

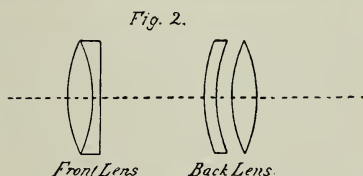
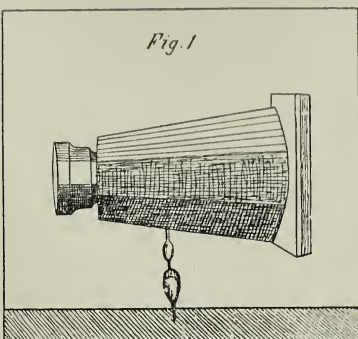
The elements of the objective are in millimeters, after the determinations of Dr. Rudolf Steinheil, the following:

$$\begin{array}{ll}
 D_1 = 7.6 & R_0 = 78.68 \text{ OZ}^1) \\
 D_2 = 1.5 & R_2 = 62.45 \text{ UZ} \\
 & R_4 = 653.06 \text{ OZ} \\
 D_5 = 51.5 & \\
 D_7 = 1.9 & R_6 = 157.96 \text{ OZ} \\
 & R_8 = 56.01 \text{ OZ} \\
 D_9 = 4.2 & \\
 D_{11} = 5.3 & R_{10} = 72.10 \text{ OZ} \\
 & R_{12} = 228.04 \text{ UZ}
 \end{array}
 \left. \begin{array}{l} \\ \\ \\ \\ \\ \\ \\ \\ \\ \end{array} \right\} \begin{array}{l} \text{Crown (med. } n = 1.528), \\ \text{Flint (med. } n = 1.598), \\ \\ \text{Flint (med. } n = 1.622), \\ \\ \text{Crown (med. } n = 1.546). \end{array}$$

The refractive exponents are not very certain, but they agree well and show that the front lens is of light crown and flint, the back lens of heavy crown and flint glass.

Fig. 2 explains the construction, and it is shown thereby, without doubt, that Petzval had so completely calculated this first sample-objective, that he had no changes to make afterwards.

1. The marks "OZ" and "UZ" behind the radii signify "upper mark" and "lower mark." The curvature radius of a lens has "upper mark," if this turns the convex side to the striking light, and the reverse.



Translated by

HENRY DIETRICH.

All copy for August issue must be in our hands not later than July 15th.

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

GRAPE SUGAR, which chemically is almost identical with the saccharine matter of the grape, but is still in no other way to be compared with it, should not be employed for pigment papers. Even the best grape sugar made of potato starch and obtained by boiling with oil of vitriol, is never pure, but contains from 10 to 20 per cent. of foreign and partly injurious substances, which oxidize the chrome salt before exposure. Potato sugar, which is not identical with the sugar contained in the grape, is, by impure sulphuric acid, contaminated with lead or arsenic and also oftentimes contains dextrine, lime or gypsum, which do not add to the brilliancy of the pigment print. The light brown crystallized sugar is the best for this purpose.

Oxalic Acid as a Preserving Medium for Pyrogallie Acid.—Pyro solution requires a preserving medium and as such sulphite of soda or metabisulphite of potassium is mostly taken. Oxalic acid is said to be also very suitable, making the addition of bromide of potassium or citric acid in consequence of its acid reaction unnecessary. An addition of 3 per cent. to the developing solution is sufficient.

Toning of the Paper Ground for Platinum Prints.—For certain purposes in artistic photography it may be desirable that the paper ground of the picture does not appear entirely white, but has a faint tone, which gives to the picture a greater softness. Such a light-yellow brown tone can be given to the picture in a very easy manner, by bathing the same for some time in a weak solution of permanganate of potassium. According to the length of time the picture is left in the bath, a lighter or darker coloration of the paper can be obtained. The color consists of manganese superoxide and is light proof.

Fixing after Toning.—It happens frequently that with separate toning baths, double tones are obtained after fixing, instead of one uniform tone. To improve this, wash well and tone anew with a bath of:

Ammonium sulphocyanide.....	30 grams.
Chloride of gold.....	1 gram.
Caustic lime.....	1 "
Water.....	300 cubic centimeters.

The toning proceeds very quickly and an agreeable bluish black tone is obtained. The picture can also simply be fixed after printing, and then after good washing be toned in this bath.



THE LATE W. B. BOLTON.

IN the death of Mr. Bolton at his home in England on the 12th of May last, photography has lost an able worker and one whose efforts were untiring and constant. Mr. Bolton succumbed to the disease of cancer, from which he had been suffering for several months, and was joined in death by his mother within eight hours after he passed away.

Mr. Bolton's active connection with photography dates back to September, 1864, in connection with the collodio-bromide emulsion process, since which time he has been constantly experimenting and contributing to the photographic press of England and America, and was editor-in-chief of the *British Journal of Photography* from January, 1879, until the end of 1885. He leaves a widow, but no children.

LAST CALL.

IT is evident from the following circular-letter to the western contingent that the preparation for both business and pleasure at the Convention have been carefully made, that a lavish supply of each will be provided, and that it will be of excellent quality. Our eastern friends will find notice in another place of the transportation arrangements from this part of the country, and, in the interests of all, it is to be hoped that the attendance will be large this year. Too much emphasis cannot be laid upon the importance of attending the meetings and becoming better acquainted with the work exhibited and the methods by which it is produced.—[EDITORS.]

A BUSINESS PROPOSITION.

The Nineteenth Annual Convention of The Photographers' Association of America, to be held at "Celeron," on Chautauqua Lake, July 17th to 22d, promises to be the grandest ever held. Our leading photographers are taking a greater interest than ever before, and the exhibit will undoubtedly be the largest and finest collection ever yet hung.

Professor Lorado Taft, of Chicago, the noted sculptor, will address the Association at times throughout the week on lines of interest and value.

The American Aristotype Company has arranged with Professor Griffith, of Detroit, to address those in attendance at the "School of Photography." Professor Griffith is now so well known to you all as an artist of rare ability and helpful ideas as to need no introduction. He will be at each session of the school, and you should not fail to hear him.

The "big team," "Billie" Rundle, of Chicago; Jno. S. Schneider, of "Baker's Art Gallery," Columbus, O., and Pirie MacDonald, of Albany, N. Y., will be under the skylight. Could you ask for more? This is a chance of your life to obtain valuable pointers in lighting, posing, etc. Don't miss it. You will regret it the rest of your life if you do.

The school bids fair to be, if possible, of more than usual benefit and interest to those in attendance. As a business proposition you cannot afford to miss the Convention this year.

Special arrangements have been made to meet you at the Palmer House, Chicago, on the morning of the 16th of July, by the different representatives of manufacturers and dealers, who will try to entertain you until 3.00 P. M., when our big special train will leave the Polk Street Depot, over the Erie Railroad, arriving at Jamestown at 7.30 A. M. next day.

The Erie Railroad has made special arrangements, for your accommodation, to attach to their New York Limited 3.00 P. M. train, which leaves their station, corner Polk and Dearborn streets, Sunday, July 16th, all the extra Pullman sleepers required to properly care for you all. This train also carries Pullman dining cars. Visitors and delegates from St. Louis, Mo., and the Southwest, who desire to join their

friends on the Chicago special, can do so at Marion Junction, at 10.15 that evening. We presume that necessary arrangements will be made for our friends from the South to use the Erie Railroad from Cincinnati, from which point extra sleepers will be run, joining the Chicago contingent at Marion Junction that evening. From that point, namely, Marion Junction, delegates, their friends and visitors from the South, Southwest, West and Northwest will all go forward on same train. It will be unnecessary for me to say to you that the crowd on that train from that time will be very lively.

Tickets for this train can be purchased at Erie ticket office, 242 South Clark street (Grand Pacific Hotel Building).

We hope to make the trip one of pleasure to you all.

Close your studio, if necessary, for the week, and join us in the "hustle" for artistic advancement, gaining something thereby, which you can place on the market at a higher price than you are now getting. We promise you one of the most pleasant and profitable outings.

The railroad fare from Chicago to Jamestown and return will be only \$12.

Hotel accommodations are of the best and finest, both at Jamestown and the lake.

Rates have been reduced during Convention week, and will range from \$1.50 to \$2.50 per day.

Are you with us?

For further information address

W. B. GLINES, *Chairman Reception Committee*,
45 East Randolph Street, Chicago, Ill.

COPYING.*

BY OSBORN THORNBERRY.

EVERY amateur photographer has at some time or another a photograph or print which he desires to copy. He does not always make a success of it, as he does not know how to treat it to obtain the best results. He may have broken a valuable negative, and, having a print of it, he desires to copy it to obtain another negative. I am sorry to say that many amateurs are very dilatory, and do not keep prints of their negatives. This is a great pity when a negative which cannot be obtained again is broken, as then it is completely wiped out of existence. This would be different if all amateurs would keep a portfolio containing prints of all the negatives (that were any good) that they had taken; not only would it be useful if a negative by some means or other got broken, but would give much pleasure in after years to look over it and call to mind many a pleasant hour spent in photographing. All subjects to be copied should not be treated in the same way; for instance, a photograph should not be copied in the same way as an engraving or line drawing, because a photograph has half-tones which must be reproduced, whereas an engraving has clear whites which must be perfectly opaque on the negative, with clear shadows. Glazed photographs are decidedly the best to copy, as the grain of the paper does not show so much as it does on a rough photograph. When bromides are to be copied, they should be glazed by squeegeeing on to a ferrotype plate. I find that a 12-inch by 10-inch printing frame with a piece of glass in it is best to put the photo-

**The Amateur Photographer.*

graph or print to be copied in, as the print will not buckle or crease in the frame, and the pressure on it will smooth down the grain. The print must be placed as near as possible in the center. If a picture hook is screwed into exactly the center of the top of the frame, it may then hang from a nail perfectly parallel with the wall while copying. Before copying, the photograph should be sponged, to remove any finger marks, then spotted, and any defects retouched out, so as to make the copy as good as possible. The camera must be placed opposite the subject and parallel to it, and the axis of the lens must be exactly level with the center, or distortion will result. The lens may be either a rectilinear or a wide angle, though the former is preferred if not of too long a focus, as it is not so liable to distort the picture. If the object is to be photographed to its exact size, the distance of the object from the lens and the distance of the focusing screen from the lens must both be twice the focal length of the lens. If the lens is a long focus one, the bellows will not always extend enough. If this is the case, an extension of a few inches may be made by taking out the frontal board of the camera, and fix in a cardboard box to fit it tightly; the lens should fix in the front of the box, it should be perfectly light-tight, and be blacked inside with dead-black. Most cameras are made now with 16 inches extension of bellows, so the extra extension will not be needed, unless the lens is a very old-fashioned one. If it is desired to copy the print smaller than its real size, the camera will not have to be extended so far; if required larger, the extension, of course, will be greater. Magnesium ribbon, gas light, incandescent, lamplight, acetylene, and daylight may be used as illuminants; the latter is preferable as it gives best results, but some amateurs are engaged all day, and these of a necessity must use artificial light for copying. If practicable, the photograph should be copied out of doors in an even light, but not a strong one. It should be focused as sharp as possible, and then the lens stopped down; not too low, unless the photograph contains some fine detail or the light is very bright. Now, with regard to exposure, this will depend upon (1) the light, (2) rapidity of the lens, (3) stop used in the lens, (4) distance of lens to the ground-glass, (5) distance of the lens to the subject, (6) the color and depth of the subject, (7) the rapidity of the plate.

It will be found that photographs toned to a yellowish brown require a longer exposure than those toned to a purple. Bromide prints and photographs of a slaty gray-blue color will copy in much less time than those of a red chalk or sepia tone. Prints that are fading or are turning yellow will also require a long exposure. In photographing this class of print it is best to use a slow isochromatic plate. If the prints are very yellow, they should be placed behind a pale blue glass. Slow plates will generally be found the best for copying, as they do not block the high lights so much as rapid ones. The correct exposure cannot be given without knowing the circumstances, but we will suppose that we are copying to same size as the original a photograph of a purple color; using an Ilford ordinary plate, R.R. lens of about 6-inch focus, stop $f/22$, out of doors in a fairly bright light, the exposure would be about three minutes. Copying is not practicable out of doors in wet weather, but it may be done inside in a well-lighted room. The object should face the light, but this cannot always be done, because of the reflection. If this is the case, it should be taken with a side light, a piece of white cardboard being placed underneath it to throw up the light, also another piece at the side farthest from the light. This will effectively distribute the light, and tone down the grain. Of course, indoors the exposure will be much greater than that given for out of doors, but ten minutes to a quarter of an hour will generally be found sufficient. As I mentioned above, artificial light may be used, but the exposure will be very long compared with daylight. Focusing must be done by holding a lamp close up to the photograph; a smaller stop than $f/16$ must not be used, as it will only increase the exposure. With magnesium ribbon about 12 inches burnt on each side will be required. Each should be cut into two pieces of 6 inches each, as it is then more convenient to use. It should be held in a pair of pliers while burning. When the plate is in position remove the cap from the lens, and light a piece of the ribbon by holding in the flame of a candle; when alight hold a little to the right of the lens, taking care that no shadow falls

across the picture, then burn another piece. The other two pieces should be burnt on the left side in the same manner. With gas and lamp light, the exposure will be very great, and plates will require one or more hours' exposure; with incandescent the exposure will be about three-quarters of an hour, and with acetylene twenty minutes to half an hour will be sufficient. It is important that the exposure should be made in a room free from vibration, otherwise blurred pictures will result. These negatives are best developed with pyrogallic acid, as it will give more detail and less contrasts than hydroquinone, and is far and away the best for developing plates exposed on any subjects that have half-tones. If the negative after fixing is found to be thin, it should be well washed and treated with the ammonia and mercury intensifier. Engravings, drawings, and black and white prints will require different treatment to the above. In the first place, the best results can only be obtained by copying in an even and diffused daylight, and must be focused as sharply as possible and the lens well stopped down. Photo-mechanical plates should be used, but it must be remembered that these plates are very slow, and consequently require a greater exposure. They give more contrast and are the best to use, because in a subject with lines the main point is to obtain clear glass in the lines, combined with great density in the whites. This can only be obtained by giving a correct exposure and developing with a weak hydroquinone developer. If the negative is thin, it is advisable to intensify it. This is best done by soaking the negative for ten minutes in a 5 per cent. solution of hydrogen peroxide and well wash, then place in a bath of—

A—Bromide of potassium.....10 grains,
 Bichloride of mercury.....10 “
 Water 1 ounce,

till white, rinse, and then transfer to—

B—Pure cyanide of potassium.....10 grains,
 Nitrate of silver.....10 “
 Water 1 ounce.

Great care must be taken that the print is evenly illuminated and the camera upright, as any grain or distortion would completely spoil a line subject. Sometimes a picture in a book is required to be copied, and, as most of the pictures in books are copyright, it is advisable to first of all obtain permission of the author or publisher before copying. If the book is of value, the leaf cannot, of course, be cut out, so it must be photographed where it is. This is best done by tying pieces of tape round the book on the margins, thus keeping the leaf perfectly flat, and the leaves on the other side of the book may be kept back by tying another piece of tape round the middle. The book may then be stood on the edge of a table or a ledge, in a good light. No difficulty will then be found in copying it. Amateurs have sometimes negatives that are very thin, which no amount of intensification will improve. With this class of negative it is best to bleach them with white right through in a saturated solution of bichloride of mercury, wash, dry, and place a piece of black paper on the film side. On looking at it on the glass side, it will be found to be a clear positive image. If this is copied on a photo-mechanical plate, it will make a good negative. Tracings of drawings and plans it is sometimes desired to copy, with these it is also best to obtain a negative with opaque whites and clear blacks. There are three methods of copying them: (1) copying in the camera, (2) negative by contact on glass, (3) prints by contact on paper. The latter method is mostly used by engineers, as it gives a print exactly the same size as the tracing. It is done by making a solution of gelatine $\frac{1}{2}$ ounce, water 7 ounces, heat it till dissolved, then mix with Indian ink or some pigment, and pour while warm and liquid into a dish. Float a piece of paper the desired size upon it, and dry without heat. When thoroughly dry, place in—

Perchloride of iron..... 240 grains.
 Tartaric acid..... 72 do.
 Water 5 ounces.

Allow to remain for three minutes, and dry it in the dark. It should be placed in the printing frame with a piece of glass in the front, the coated side against the tracing, and when printed place in warm water, and the parts acted upon by light will be dissolved away, leaving the lines black on a white ground. If a great number of copies the same size as the original are required, and the tracing is only available for a short time, the best plan will be to make a negative. This is done by placing the tracing in the frame as before, and putting a photo-mechanical plate in contact with it, exposing it to the light for about ten seconds, and then developing with a weak developer. As many prints as are required may be obtained by printing on P. O. P. or some other paper in the usual way; this will also give black lines on a white ground. By copying in the camera, the tracing may be copied to any size. It is done in the same way as an engraving, except that it is backed up with a piece of white paper. Oil paintings should be photographed out of doors, as the light is more even, and does not exaggerate the grain of the canvas. They present special difficulties in consequence of the failure of ordinary plates to correctly reproduce the lights and shades, as the colors interfere with them. Thus, if there is any red in the picture, it will come out black in the copy; therefore orthochromatic or isochromatic plates must be used, as they are more sensitive to yellow and red than ordinary plates. Oleographs and colored pictures should also be treated in the same way. Transparencies and lantern slides may easily be copied. They should first be unbound, that is, the binding should be scraped off and the cover glass removed. It should then be placed in the printing frame, film side in, and on top of it should be laid an ordinary plate, film side against the other film; slow plates are the best because they give greater brilliancy. If the transparency is of the usual density, the negative should be exposed for about three seconds, 2 feet from an ordinary fish tail gas jet; prolonged exposure will result in a flat negative—a very weak developer must be used. This is the easiest method, but is not always practicable, as it is not every transparency that can be unbound. In this case the best plan would be to place it in the enlarging camera and reproduce it to the same size.

The positive collodion process on glass is one that retains its beauty forever. We are sometimes asked to copy one of these. Now these positives are practically a negative whitened and backed up with some black substance. If this can be removed, it may be used as an ordinary negative, and prints obtained from it in the usual way. If the backing is velvet, no difficulty will be found in removing it, as it will peel off easily. If it is black varnish, no attempt should be made to remove it, as it is very risky, and will be almost sure to end disastrously, owing to the frequently tender condition of the collodion. The negative, then, must of a necessity be made by copying with reflected light, as described above. Many daguerreotypes, which were the rage some fifty years ago, are still as brilliant as when first made. These sometimes present difficulties in copying, because the image, being formed of silver, tarnishes easily, and if photographed in this condition it will appear as if stained; therefore it is best removed. Take the plate carefully from the mount and lightly dust with a camel-hair brush. Care must be taken in doing this, as the film is very tender, and will be spoilt if fingered. Make a solution of pure potassium cyanide, 15 grams to the ounce of distilled water, and pour it in a porcelain dish. Wash the plate over with some alcohol (which must be absolute and pure) two or three times, and place in the cyanide bath, rock the dish, and leave the plate in till clear and bright, which usually takes from five to ten minutes. Wash slightly with water, and give a final swill with distilled water; then dry it by holding over a spirit lamp with a pair of pinchers, blowing continuously till quite dry. Daguerreotypes, unlike photographs, should be copied in a good light, sun-light if possible, so as to obtain a brilliant reproduction. If the above directions are carefully followed, no amateur ought to have any difficulty in copying any subject.

BEAR in mind that the ladies will be welcome, and will be well cared for at Convention. Take your wives along for a holiday with you.

THE PROBLEM OF THE DEVELOPABLE PHOTOGRAPHIC IMAGE.*

BY COLONEL J. WATERHOUSE, I.S.C.

WITHOUT going so deeply into the theory of the invisible photographic image as Captain Abney and Mr. Chapman Jones have done, I venture to bring forward a few facts and considerations which may help to throw light upon the vexed question of the physical or chemical nature of what is commonly called the "latent image."

First, I may note a tendency in the present day to refer all such questions to the ordinary gelatine dry plate. This is, no doubt, convenient, because the plates, being easily obtainable ready prepared, are in universal use for all photographic purposes, and the lessons they can teach us are more or less applicable to other sensitive photographic surfaces containing combinations of silver haloids. At the same time, the question is a many sided one, to be attacked in various ways, and the teaching of some of the earlier and now almost obsolete processes should not be lost sight of.

That we really have an exceedingly difficult problem to solve is sufficiently shown by the fact that, after sixty years of careful and constant investigation and research by the best and foremost chemists and workers in photography in this and other countries, we seem almost as far off as ever from a satisfactory solution of it. This difficulty, it must be confessed, is not without its advantages in maintaining a continuous striving and effort to get at the secret of the mysterious action that forms the basis of all our photographic processes in which the haloid salts of silver take part.

During the sixty years that have elapsed since these salts were first used to produce an invisible, but developable, image, an immense number of valuable observations of the phenomenon under different conditions have been recorded, and many more or less possible theories have been put forward to explain it. It is, nevertheless, very difficult for a worker of the present day to find any concise and systematic statement of what is known about the question, and of the efforts that have been made to solve it. The information available is scattered through periodicals and journals and a few text books. It seems, however, very desirable that some effort should be made to bring together and classify the important work already done. The treatises of H. W. Vogel and Eder, in German, and Fabre, in French, supply this want to a great extent, but are not very accessible to English readers.

Briefly stated, the claims of the adherents of the chemical theory are, that the haloid salts of silver are chemically decomposed by the action of light, the halogen being set free, or combining with any suitable organic or metallic absorbent present, sub-haloid salts being formed. This is the theory which, on various grounds, is generally adopted, more especially as regards the haloid compounds usually found in gelatine emulsions or dry plates.

* From *Photography*.

Another view, put forward by some advocates of a chemical theory, is that the action of light produces a minute quantity of reduced metallic silver, upon which, as a nucleus, the image grows under the action of the developer, either by simple molecular attraction or by electrolytic action.

On the other hand, the advocates of the physical theory claim that no chemical decomposition takes place at first, at any rate, but that the disturbance set up by the action of light causes the bromide to assume an allotropic state, which, although causing no change in its appearance or chemical composition, renders it more readily capable of reduction by the developer.

It must be remembered, however, that no chemical change can take place without some accompanying physical action, and, even supposing that the composition of the altered silver haloid remains the same as before, if the result of physical action is to produce a substance having distinctly different chemical properties, the process by which this result is obtained must be considered a chemical one, or, at any rate, a physico-chemical one.

As Mr. Chapman Jones remarks, the first action of light must necessarily be physical. To what extent it may or may not be directly connected with the electric or magnetic theory of light, as propounded by Clerk Maxwell, is an open question, but that there is a connection is shown by the very early work of Becquerel and Robert Hunt with electric actinometers, as well as by the later researches in the same direction of Minchin, Abney, Rigollot and others, and, perhaps, most clearly and definitely by Röntgen's discovery of the action of the X rays, and the researches by various physicists on the action of ultra-violet light in connection with electrical discharges and conductivity.

Becquerel showed that the effect of light falling upon coatings of silver iodide, chloride or bromide on silver plates immersed in a suitable conducting fluid, one plate being exposed to light and the other not, was to generate an electrical current, of which the force and amount are capable of being measured and estimated by the ordinary methods of electrical measurement. Minchin has been able in a somewhat similar manner to cause the light of a distant star to generate an electrical current, which could in the same way be measured and compared with the light of other stars, or of the sun or any other source of illumination. I have at present under observation an electrical actinometer on Rigollot's principle, which shows that the power of the light of a candle about 6 inches away is about .003 of a volt, and dull daylight about the same, or even less.

The action of electrical currents must, however, be accompanied by chemical decomposition, and *vice versa*, and which is the cause, and which is the effect, is, I believe, still a disputed point. If, in the case of the photographic plate it can be shown that the chemical decomposition of the exposed parts of the film is a direct result of an electric or magnetic action of light, it would go far to solve our problem from the physical side.

That the question is worthy of consideration from this point of view may be gathered from the following extract from the English translation of Nernst's "Theoretical Chemistry," page 626. Under the sub-heading of "The Theory of Photochemical Action," the author says:

"Thus far only vague surmises have been expressed regarding that mechanism by dint of which the energy of the vibrations of the luminiferous ether is applied to the performance of chemical work. But in consideration of the fact that in the sense of the later views the light vibrations are produced by electric agitations, therefore it is an immediate inference to suppose that in the chemical action of light we are dealing with phenomena which are not far removed from the formation and decomposition of chemical compounds under the influence of the galvanic current. But it is possible that the time to advance from this standpoint to hypothesis of a special nature will not arrive until our views regarding the mechanics of the light process shall have become clearer themselves, and also shall have been worked out with more completeness."

I have myself thought for some years past that it is in this direction that we must look for further light, because if we can once establish a good connection between photochemical and electrochemical action, we get at once into touch with a means of exact measurement of force by which the physical or chemical action of light can be compared with physical or chemical actions produced by other agencies.

As I demonstrated some years ago, it is quite easy to show and measure with the aid of a galvanometer the reversal of the electrical current generated during the development and reversal of an overexposed ordinary dry plate film. As the normal development proceeded the needle advanced, and as reversal set in and progressed it receded.

Another strong point on the physical side, brought forward by Mr. Chapman Jones, is the fact, first drawn attention to by the late Carey Lea, that photographic plates are very sensitive to the mechanical effects of friction, pressure, or shearing stress, even so slight as the touch of a smooth glass rod. This fact at any rate shows that the developable condition of the silver haloids can be brought about by mechanical means on the photographic plate without the aid of light. The nature of the chemical change thus produced does not seem to have been clearly ascertained, but there can be little doubt from Captain Abney's researches on this subject that there is a chemical change caused by shearing stress, and that it is not a mere case of allotropism or of mechanical action on the gelatine.

Leaper took some silver iodide and subjected it while moist with silver nitrate to the pressure of 3 tons on the square inch for three months without changing its color in the least, though it darkened under the developer.

Carey Lea, in a very interesting paper on "The Disruption of the Silver Haloid Molecule by Mechanical Force" (*American Journal of Photography*, 1892, page 344), has shown that under a pressure of about 44 tons to the square inch the chloride, bromide, and iodide

all darkened within twenty-four hours, the color being a deep greenish black. Further, he triturated the pure chloride and bromide in a mortar, and after about twenty minutes' grinding succeeded in darkening them, the color being in both cases a purplish chocolate, very different from the greenish black obtained in the last experiments.

I have been able to darken silver chloride in the same way by trituration in a mortar, and obtained a similar reddish chocolate tint. The bromide and iodide proved more refractory, but it was found that after trituration they were all readily darkened by an ordinary pyro developer.

It was further found that impure forms of the haloid salts themselves could be prepared in the same mechanical or physical way by rubbing together in a glass mortar dry silver nitrate and potassium bromide, or iodide, or sodium chloride. With these forms of haloids, however, a prolonged and stronger grinding did not produce any distinctly visible darkening, so that there is something more in the action of light than there is in the merely mechanical action, though both produce a developable form of silver haloid. The fact that physical or mechanical action will bring about chemical combination is well known, and, in the case of some very unstable compounds, the lightest touch of a feather is sufficient to bring about chemical decomposition, often of a very violent character. Carey Lea notes that these decompositions, being exothermic, have nothing in common with the endothermic decompositions of silver haloids. The very fact that such an utterly intangible excitant as a ray of light, even of the faintest character, can so readily bring about the decomposition of the surface of a highly sensitive photographic plate is of itself sufficient proof that the silver haloids are very unstable compounds under certain conditions, and we may well expect that they would be decomposed by mechanical pressure, or shearing stress and other forms of physical energy, though this result cannot, I think, be taken as a proof of a purely physical action of light *per se*.

I fear this paper has already exceeded its limits, so that I can only deal very briefly with the other side of the question. First, as to the visible image. It is often argued that, because we cannot see an image as the result of the action of light on our sensitive plates, there is no such image. I am inclined to think that it is the other way about—there is an image, but we cannot see it. In many of the old dry-plate processes it was quite common to have a visible image before developing, and that without any over-exposure. During my experiments with daguerreotype last year, I noticed constantly that the image was visible on the plate after exposure, and could be made more so by breathing upon it. In fact, I used this appearance as a test whether the image would develop. If I could not see it by breathing on it, I did not get much result from developing.

Again, in many of the colochromate processes with gelatine, although the action of light may not be visible, its effect upon the gelatine can at once be seen by placing the film in water.

We know that developable states of the silver haloids on a photographic plate can be produced in the dark by all forms of energy as well as by purely chemical and electrolytic methods. The question, therefore, is to ascertain if the reduction product in all cases is the same as that produced by light, and, if so, whether it will be possible to produce it by any one of those agencies in sufficient quantities to admit of its being tested by the ordinary methods of chemical analysis, and its composition definitely determined.

Dr. Russell's recent researches on the action of various substances in producing a developable image on gelatine dry plates, which he attributes to the action of peroxide of hydrogen, show that this developable condition of the silver haloids can also be produced by purely chemical means without the intervention of light. The fact that this result seems to be in all cases attributable to peroxide of hydrogen seems to me to open out a very interesting field of new enquiry as to whether this substance is formed during the action of light on the photographic plate, and how? Its presence would seem to point to a decomposition of the atmosphere under the influence of light, or other agencies capable of producing the developable image. It appears not impossible that the known highly magnetic properties of oxygen may be a factor in producing the light effect, especially if we can trace its origin to any physical, electric or magnetic action.

In conclusion, I think that in this, as in many other cases of chemical action resulting from physical causes, there is no hard and fast line between the physical and chemical actions of light on the photographic plate. They go together. It is a case of *l'union fait la force*, and we shall gain little by trying to separate them. The elucidation of the problem lies in the domain of physical chemistry, and more especially in the direction of photochemical and electrochemical research. The new evidence of other distinctly physical and chemical forms of action, the X-rays and the action of peroxide of hydrogen, being able to produce the same effects on a photographic plate as light, should, if followed out, be able to advance our knowledge of this complicated question very materially.



THE next issue of the BULLETIN will be a valuable one to keep, in addition to your regular file copy, as it will contain a complete history of the Convention proceedings and will be published immediately after adjournment as soon as the reports can be put in type. A complete list of the prize winners will be published in this number, together with notes on the exhibits as a whole, condensed reports of the addresses before the school of photography, and such general items of real interest and value, photographically, as are always in evidence at a convention of this kind. The BULLETIN will make a special effort to present to its readers, not only the *first* report of the Convention published, as is its custom, but the best as well. If extra copies of this number are wanted they should be ordered in advance.

SOCIETIES



THE fifteenth Annual Meeting of the Providence (R. I.) Camera Club was held on June 14th. A new constitution was adopted, and the following officers were elected for the ensuing year: Frederick T. Wilbur, President; W. P. Mather, Vice-President; A. F. Manchester, Secretary; Edmund A. Darling, Treasurer.

The report of the Treasurer showed that notwithstanding the large expenditures of the past year, there still remains a good balance to the credit of the Club.

AT the Annual Meeting of the Haverhill (Mass.) Camera Club, held on the evening of June 13th, the following officers were elected for the ensuing year: Chas. W. Glines, President; George E. Dodge, Vice-President; Alfred E. Collins, Secretary-Treasurer.

THE Annual Meeting of the Colorado Camera Club was held in the Club rooms in Denver on the evening of June 6th, when the following officers were elected: William C. Daniels, President; S. C. McCurdy, Vice-President; S. B. Hord, Secretary, and J. F. Ellsworth, Treasurer.

It was arranged to hold a series of lectures by photographic experts at regular intervals, and several improvements in the Club rooms were decided upon.

THE following new clubs have lately been organized with the officers named below:

The Camera Club, of Portland (Me.): George F. Gould, President; N. W. Edson, Vice-President; Edgar R. Dow, Secretary, and J. H. Lamson, Treasurer.

THE Meadville (Pa.) Camera Club: Dr. J. H. Montgomery, President; Rev. A. C. Bowers, Vice-President; Charles F. Clyde, Secretary; Mrs. A. L. Ballinger, Treasurer.

THE Camera Club of the West Branch Y. M. C. A., Baltimore, Md.: Bryan Nicholson, President; William N. Hazen, Vice-President; Charles E. Adams, Secretary and Treasurer.

THE Capital City Camera Club, Salem, Ore.: A. E. Strang, President; R. H. Leabo, Vice-President; Miss Fannie Kehne, Treasurer, and Mrs. W. E. Copeland, Secretary.



VACATION DAYS IN HAWAII AND JAPAN, by Charles M. Taylor, Jr., of Philadelphia, is a very interesting description and a delightful story of a trip taken by Mr. Taylor in 1896 through Hawaii and Japan. The many eventful experiences and situations encountered, are described in a charmingly simple style, which is both attractive and instructive. The book is well illustrated with half-tone prints from Mr. Taylor's own negatives, is finely printed on wood cut paper, and handsomely bound in cloth. The publishing price is \$2, and the book may be obtained of our publishers.

A REFERENCE BOOK OF PRACTICAL PHOTOGRAPHY, Part II, by F. Dundas Todd, has just been published, and is made up of tables and formulas of many kinds, for practical application in the darkroom and laboratory, together with very complete notes upon the darkroom and its fittings; developers, with a large number of formulas, and several chapters devoted to development, fixing, intensification, reduction, varnishing, and kindred topics. Price the same as Part I, 50 cents.

WONDERLAND, '99, published by Charles S. Fee, General Passenger and Ticket Agent of the Northern Pacific Railroad, is a beautiful example of what photography can do when applied to a purely commercial enterprise. The book, which is made up of over one hundred pages and printed on coated paper, is beautifully embellished with half-tone illustrations from views made in all sections of the road. It is enclosed in a handsome lithographed cover, and has valuable information and statistics concerning the country through which the road runs. Copies are mailed upon application and enclosure of 6 cents postage to Charles S. Fee, St. Paul, Minn., and the publication is well worth the cost of obtaining it, if only for its photographic value.

THE PHOTO-MINIATURE for May treats of the very difficult subject of the pose in portraiture, and is, on the whole, the most complete guide to this most important subject obtainable at the cost of the *Miniature*, of which we know. Half-tone illustrations and diagrams, after prints from some of the best of our modern workers, are used to illustrate the several points treated, and the publi-

cation forms a valuable second in the proposed series for the year. No. 3 for June, treats of the hand camera, and is a valuable addition to the literature on this subject. The price of the *Miniature* is \$2.50 per year; single numbers, 25 cents; from our publishers.

THE Catalogue for 1899, lately issued by the Eastman Kodak Company, is unique in that it has upon its front cover a remarkably faithful representation of the old-fashioned daguerreotype, with its stamped, gilded mat and plush case. The subject of the daguerreotype is Daguerre himself, and the treatment of the entire cover is very effective. The Catalogue contains a large assortment of the Eastman goods displayed in their usual attractive and artistic manner.

THE Rochester Camera and Supply Company have just issued their catalogue for 1899, which contains a large assortment of Poco Cycle and Folding Cameras. The catalogue is well printed on coated paper, and is gotten up in a very neat and attractive form.

THE 1899 Catalogue of the Rochester Optical Company, carrying a full line of all Premo goods, is lately received, handsomely illustrated with half-tone cuts of the various cameras, and also of the views made by many of them. It is handsomely printed in oblong shape, in two colors.

ODD TIMES, No. 4, published by the Camera Club of the Brooklyn Manual Training High School, exceeds the anticipation of its best friends, and appears as a unique publication in the school world. This number contains twenty-four pages, besides several full-page inserts, and is embellished with a number of initial letters printed in outline and hand-colored in wash; the cover contains an excellent representation of a golfer of the present time, printed in outline and colored by hand, as are the initials. The matter in this publication is written, the type set, designs drawn, and the magazine printed and bound by students of the school. This is the only case we know of where work of this kind is done in its entirety by the pupils, and the quality of the work is equal to that turned out by any first-class establishment, with a long reputation behind it.

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STUDIO WORK.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

AUGUST, 1899.

No. 8.

THE NINETEENTH ANNUAL CONVENTION.

THE Nineteenth Annual Convention of the Photographers' Association of America, which closed its session at Celoron on the 22d of July, is generally conceded to have been the best Convention in the history of the Association. It was marked by an increased attendance over the previous year and the spirit of study and attention to the business of the Convention, which has been steadily increasing during the later years, was especially noticeable on this occasion. The quality of work shown in the art annex was of a very high order, and while, of course, there were many exceptions, the general average of merit was high. Some few examples stood out in bold relief, and the crowds that stood before them at all times and the comments passed upon them gave evidence of their excellence. The introduction this year of the miniature class served to bring out some striking work, which, on the whole, was very creditable, though there were indications in some of the exhibits that, while the pictures shown came strictly within the description of the class to which they belonged, they might have been taken from cabinet or larger negatives and trimmed to the size required for the miniature instead of being made strictly with a view to use for this purpose.

A careful study of the pictures exhibited, reveals much to encourage the conscientious worker, for a steady gain is noticeable in the artistic elements and technique of the men who have been represented in the last two or three years. The eagerness with which the opinions of such gentlemen as Professor Taft and Professor Griffith were sought by exhibitors, and the manly and honest way in which their criticisms were made and received, give strong indications that the work of next year will be even better than this. In this particular alone, the man who attends conventions, and makes use of the many opportunities for comparison and criticism holds a great advantage over his neighbor who has no interest in it. Professor Taft's lecture on Tuesday evening on "Famous Portraits" was greatly enjoyed, and we regret that it cannot be recorded in the BULLETIN in detail, but as

it was so intimately associated with the lantern slides, of which it was a descriptive criticism, his words would be valueless to our readers without the illustrations to which they belonged. Another and very important feature of the Convention, which was appreciated by all, was the School of Photography, instituted and carried on by the American Aristotype Company, and in which practical demonstrations of lighting, posing, developing, retouching, printing, toning, and all kinds of work in the photographic studio, were given during the week by men of experience and reputation. That these demonstrations were valued highly was evidenced by the crowds that filled the hall on each occasion.

The selection of Milwaukee as the next place of meeting for the Convention gave very general satisfaction, as it has for some time been the desire of the West to obtain the privilege of entertaining the Association, though the feeling among the members seemed to be very generally one of regret at leaving a place where so many elements combined to make an ideal Convention city. From the reports that follow, much will be found of interest and value to those who were not present, and to those who were there, a careful re-reading will, no doubt, serve to reveal new thoughts and to make stronger impress on the memory of the impressions carried away. "The King is dead ; long live the King"—success to Milwaukee in 1900.

THE OFFICIAL REPORT.

FOLLOWING the custom inaugurated two years ago, the BULLETIN publishes in the present number a full record of the meetings of the Convention, made up from the stenographic reports of each day's proceedings by the official stenographer of the Convention, feeling sure that in thus presenting the work of the Convention in its entirety a better conception will be had by its readers than would be possible from any curtailed or fragmentary record of the proceedings.

THE SCHOOL OF PHOTOGRAPHY.

THAT this most important branch of the Convention work, from an educational standpoint, was appreciated by the members of the Association, was apparent from the crowds which daily filled the large theatre building in which the demonstrations were held, and the enthusiasm with which the members entered into the spirit of the work, asking questions and making comments in a manner which showed them to be deeply interested in the subject-matter under discussion. A large side light had been built into the building, over the stage, so that the audience could, from the auditorium, keep thoroughly in touch with all the operations carried on, and on this platform Tuesday afternoon Professor A. H. Griffith addressed the school on the subject of "Pictures and Portraits." Professor Griffith was followed by Mr. John Schneider of the Baker Art Gallery with a very effective demonstration of "How to Make Artistic Negatives that will

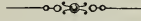
Print," Mr. Schneider in turn being followed by Mr. Billie Rundle with a demonstration of practical negative making. On the afternoon of Wednesday Professor Griffith again addressed the school on the subject of "Photography as Contrasted with Painting and the Kindred Arts, the Difference, What Can Be Done in One and the Limitations of the Other," being followed by Mr. Pirie Macdonald with a very interesting line of practical work in negative-making, after which Mr. Billie Rundle gave a second demonstration of work under the light and in the darkroom, and on Thursday afternoon Mr. Billie Rundle gave a very complete demonstration with 11 x 14 plates, exposing in various lightings, developing them as he went along. Professor Griffith followed with a talk on "Lights and Shadows, Balance, Holding Pictures Together and Composition." On Friday afternoon there was no session of the school, owing to the steamboat excursion and clam bake. Full reports of Professor Griffith's talks before the school will be published in the next two or three issues of the BULLETIN, space not permitting in the present issue.

Commencing with Tuesday morning there was given each day at the school, under the direction of Mr. Harry Fell, a series of practical lessons in printing and toning, on which occasions Mr. Fell, from an elevated position on the platform, made his demonstrations before the audience, which was crowded upon the platform and in the auditorium, his assistants in the meantime carrying on the work of printing or toning as he talked. Mr. Fell's long experience in this work and his ability to answer questions in a comprehensive and understandable manner, made this school one of the best features of the week, and if Mr. Fell could be made acquainted with all the good things said of his work he would feel well repaid for the effort which must have been necessary for its accomplishment.

CONVENTION NOTES.

THE excursion and clambake given to the Photographers' Association of America by the manufacturers and dealers at Lakewood on Friday afternoon, July 21st, was a notable feature of the social part of the week at Celoron, and is one that will long be remembered by those who were so fortunate as to participate in it. Two large steamers left the Celoron pier at 2.30 in the afternoon, stopping at Lakewood for guests who preferred to join the party there, and, accompanied by the Celoron Gold Band, proceeded up the lake, returning to Lakewood at 6 o'clock, where an old-fashioned New England clam-bake had been prepared upon the beautiful lawn between the Kent House and the Hotel Waldmere. Seats were provided for eight hundred guests, who made sad havoc in the larder when once the feast began. The tables were loaded from start to finish with all those succulent dainties so necessary to the regulation clambake, which, as a New England institution, was a novelty to many of the western guests. The menu included blue fish, white potatoes, celery, crabs, lobsters, sweet potatoes, both hard and soft shell clams, green corn and water-

melon. The service was excellent, and the chef was complimented on all sides. This entertainment was under the direct supervision of a committee of the manufacturers and dealers, of which Mr. George A. Ayers was chairman, and to whom great credit is due for the success of the whole affair.



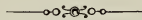
THE informal reception to the officers, general hand shaking and informal hop, which was announced for Monday evening at the Kent House, was greatly enjoyed by the large number present, although a heavy rain kept many from Jamestown and Celoron from attending.



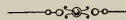
THE theater party on Wednesday evening was largely attended by members of the Convention and much enjoyed. This entertainment was a courtesy extended to the Convention by the American Aristotype Company.



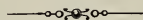
THE grand ball, feast of lanterns and lawn fête given to the Association by the citizens of Jamestown took place at the Waldmere Hotel on Thursday evening, and was in every respect a brilliant success. The grand march led by the Celoron Military Gold Band formed at the Kent House, and marched to the Waldmere, which was beautifully decorated for the occasion. The lawn between the two hotels was set with tables and chairs, and brilliantly illuminated with Japanese lanterns, the whole effect being one of fairy-like beauty. A large number of the most prominent people of Jamestown and vicinity were present to extend their hospitality to the Convention, and the function was one heartily enjoyed by all. On Friday evening an exhibition of fireworks was given at Celoron with the compliments of the Celoron Amusement Company, which ended the social features of the week.



AN exhibit of prints which attracted a great deal of attention was that made by Bushnell, of San Francisco, and which was made up of cabinet prints, accompanied by 24 x 36-inch enlargements of each, printed upon Aristo platino paper by the aid of condensing lens and mirror, after the style of the old solar prints. It is probably safe to say that not one in a hundred who viewed them had an idea that this mode of treatment was possible on Aristo platino paper, but Mr. Doyle, who had the exhibit in charge, informed us that this was only an example of every-day work from Bushnell's studio.



ANOTHER exhibit at the end of the annex, printed upon a new size of paper, made a very favorable impression on all who saw it. It is called the Celoron panel, is long and narrow, its width being not more than one-third or one-fourth of its entire height, and for many subjects is particularly adapted. The effect when mounted on a dark card is extremely artistic.

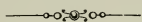


THE BULLETIN would be lacking in common justice did it fail to acknowledge the courtesies which have been extended to it as a mem-

ber of the photographic press by the officers of the Convention during the past years. Their uniform courtesy and willingness to impart information has rendered the work of the editors very pleasant, and has enabled them to do fuller justice to the work of the Convention than would otherwise have been possible. The excellence of the stenographic work of the last Convention has also tended to relieve the editorial duties to a very marked degree.



THE BULLETIN excursion to the Convention was a marked success in all ways. The train which left New York at 7.35 on Sunday evening, carrying a drawing-room car completely filled, including the state-room, besides which several others found seats in other parts of the train. A number of New Yorkers went up before Convention, and nearly a dozen later in the week, not less than fifty hailing from this city and its immediate vicinity having been present. The Erie road, as usual, extended all courtesies possible, and made the trip enjoyable in every sense of the word, and when it became time to think of coming home, the parties from all over the country were well cared for by Mr. Marshall, the agent of the Grand Trunk lines, through whose hands all certificates were obliged to pass.



A FEATURE of the art annex which called forth many expressions of admiration was the complimentary exhibit of the American Aristotype Company in the round room at the end of the annex. This collection of pictures represented work of most of the very best men in the United States, and was printed and toned with great uniformity and excellence. Each print, all of which were of large size, was framed separately and hung in groups of five or more about the room, each group being separated from its neighbors by columns, which served to break the wall space into a series of panels. An important element in the effectiveness of this collection was to be found in the treatment of walls and ceiling for the reception of the pictures, and might well serve as an object-lesson in fitting up an exhibition room in any studio.

The room being circular, and the walls divided into panels by columns equidistant from each other, the decorator had stretched tightly over the wall space in each panel a rough fabric of dark tea-green color, resembling burlap, and had toned the woodwork to the same key of color. Then, starting from a pillar in the center of the room, around which was built a cushioned seat or divan, he had spread an artificial ceiling of the same material, but a shade lighter in color, radiating from the center to within about 18 inches from the side walls, all round, inclining downward at the edges, somewhat in shape like a Japanese umbrella. The lights were placed above this ceiling, and reflected on the panels in such a way that every panel was fully illuminated from above, and yet not a single point of light was visible from any part of the room, the edge of the ceiling effectually hiding them all. A more beautiful combination than this for the exhibition of photographs it would be hard to imagine.

PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

OFFICIAL REPORT.

FIRST DAY—MORNING SESSION.

THE Nineteenth Annual Convention of the Photographers' Association of America was held at Celoron, Chautauqua Lake, commencing Tuesday, July 18, 1899. The Convention was called to order at 10.30 A. M., by President F. W. Guerin, of St. Louis.

President Guerin: "On account of the sickness of the Hon. Porter Sheldon, the address of welcome will be delivered by Hon. A. C. Wade, of Jamestown, who has kindly consented to act in Mr. Sheldon's place. I take pleasure in introducing Mr. Wade."

ADDRESS OF WELCOME BY HON. A. C. WADE.

"Mr. President, Ladies and Gentlemen: I am here as the substitute of Mr. Sheldon, who sends to you his compliments and his sincere regrets at his inability to be present. As his substitute I am here as the messenger of the people of this community to meet you, to greet you, and bid you a most cordial welcome. It is a source of gratification to us to have a national institution of this character convene upon the shores of this Lake, and here place on exhibition the product of the highest type of skill in the photographic art. You are to be congratulated that you are able to make such a display of the fruits of your labor as is here shown. You have raised the science to a most wonderful state of perfection.

"Probably you have never met on a more propitious occasion than this, when the business of the country is fast approaching high tide, and when the marts of trade in the markets of the world are filled with the product of American labor and American genius; and it is the sincere wish of this community that the present prosperity of our country may continue to bless and benefit this industry that is yours.

"Ladies and Gentlemen: I wish again, in behalf of this community, to bid you a most cordial welcome, and may memory's camera photograph for each of you this anniversary as the most healthful, profitable, and enjoyable in the history of your Association." (Applause.)

The Secretary read the following letter, viz.:

"CHICAGO, ILL., June 17, 1899.

"GEO. B. SPERRY, Esq.,

"DEAR SIR,—On the eve of my starting for Scotland with my wife and children for a holiday, I wish to send a few words to the Photographers' Association of America to express my regret at not being able to be with its members this year; in fact it is the only regret I have in connection with my trip home.

"I have always taken a keen interest in the Association since I became acquainted with it at the St. Louis Convention in 1894, and have felt proud of its wonderful growth in size and ideals year by year, and I feel certain that the gathering of 1899 will be the best yet.

"I intend to be present at the British Photographic Convention which meets at Gloucester from the 10th to 15th July, and while there I will convey to that body the good wishes of the Photographers' Association of America, and in so doing I feel I shall be rightly expressing the feelings of the members.

"I wish the Convention good weather, but I need not express one wish about a pleasant time or sound instruction, for that is in the control of the officers, and they I know will take care of all that, and order things just right.

"Yours sincerely,
"F. DUNDAS TODD."

Also the following telegram:

"LOS ANGELES, CAL., July 18, 1899.

"MR. F. W. GUERIN,

President Photographers' Association of America:

"Regret that I cannot be with you. Wish you a successful Convention.

"FRANK SCHUMACHER."

President Guerin delivered his annual address, which follows:

"Ladies and Gentlemen: It has been a time-honored custom of this Association, at this stage of the programme, for the President to make an address. In this address he is supposed to review the photographic history of the past year, comment on the health of the profession generally, and point out the ideals of the future based on the experiences of the past. It also affords him an opportunity to give vent to

any special hobby he may have, and, altogether, material for a very fair address is afforded.

"I regret that this year I must make but little of this opportunity. I have no hobby to exploit, and the photographic history of the past year is brief at best.

"No important discoveries have been made in either method or materials, although the annual visit of the color photography inventor has not been omitted, together with the usual number of process-mongers who promise wonderful things, but invariably stop at that point.

"It therefore boils down to the proposition, Have we progressed by making the most of what we have? A more comprehensive idea of this than I can give you can be gained by your own observation of the beautiful work displayed at this Convention.

"It is questionable to me if some of our prominent and esteemed members have progressed or taken a step backward. I am of the opinion our art is that of reproduction; to reproduce artistically; but to reproduce. If we overlook chemical effect, which is the one feature which individualizes our profession, it is my judgment that all of the art principles of this age, and of the old masters, will not save us from degenerating into cheap imitators of another profession, to the abandonment of our own, which should be equal in dignity and merit to any upon this earth.

"The magnificent art lectures we have listened to the past two years at our annual meet by Professor Griffith and other eminent art critics should have brought great advance to our profession, and I am confident such will be the final outcome. I have, however, some doubts if we have not accepted these lectures too literally, and that we have made too little allowance for the fact that these learned and eloquent gentlemen have been discussing entirely from the painter's standpoint, with little or no technical knowledge or experience in photography.

"To make myself thoroughly plain, I will state two examples of photographic reproduction which we will assume are competitors in the same class, and I will then give you my idea of their respective ratings.

"My first example is a subject posed utterly regardless of art principles, the background and accessories inconsistent, but fine in definition, exquisite in detail, a reproduction of flesh and draperies in beautiful tone gradations, transparent shadows, and, in fact, masterful in chemical effect, but deficient in art principles as regards composition.

"My second example is the reverse of the first, a subject beautifully posed, composition fine, and faultless in art principles, but lacking in detail, blocked shadows, void of gradations, or, in fact, lacking in chemical photographic effect.

"As between these two examples, I should rate the first the higher, and should consider it so entitled for the reason that in chemical effect lies the science, skill and art of our profession, and the composition, while an essential and valuable adjunct, is secondary to it.

"My ideal entitled to the highest rating, of course, would be a photograph which would include both chemical effect and art principle in the posing and composition.

"Therefore my conclusions are, not to drop our art study, but to infuse as much of it into our profession as we possibly can, and exercise due care and judgment in accepting only such principles as will advance our profession, and reject such as impair it.

"I believe a warning is timely in this regard, and I suggest your consideration of it.

"As to the business before this Association, I have no suggestions to make at this time, save to ask you to give careful attention to each proposition and subject brought before you, and consider well in your own mind before casting your vote for or against. Herein lies the safety and success of every organization, and it is each member's duty to think for himself.

"The Chautauqua Conventions have been delightfully characterized by a spirit of fairness and honesty and a freedom from dirt and scandal. Let this one be no exception, as I am sure it will not be." (Applause.)

The next order of business, Reports of Committees and Appointment of New Committees, was passed for the present.

President Guerin introduced as the next speaker Mr. C. M. Hayes, whose coming upon the platform was the occasion for a long round of applause.

ADDRESS OF C. M. HAYES.

"In a convention, a coming together, such as ours, it seems to me that we should not devote our attention, exclusively, to this or that plan of action, nor yet to this or that style which has become prominent in the time just preceding our meeting. It is proper, I think, that we should step for a moment outside the narrow world which

binds our profession, and every profession, and, if possible, look at ourselves and our work with the eyes of the outside world.

"By this, I do not mean to criticise any especial school, or fad, or to boom any method or material, but rather to take the broader view and see how our tools of trade, the material things of our profession, are generally regarded. There have been changes occurring in the public mind regarding photography, and by this I do not mean portraiture as much as the old field of the work. Cameras have multiplied without number, and the lay hand, the kodak and accompanying fiend, are fixed appurtenances of the close of the century. Inveigh against them, if we will, but I think we must admit that they have popularized photography. Let us start with this as a basis for the growth of photography, and see where it has landed our art; not as practiced in its highest development, but at the same time as truly a branch of the art as the limb of a tree is a branch of the tree, a part of the whole, although not the trunk.

"When the printing press began to send its message of a possible general enlightenment to the little world of the time it was hailed with delight and its product was called the 'Art Preservative of all the Arts.' That may have been true then, but is not now. Photography then unknown to the world has taken its place, simply because no description, however graphic, or by the most talented writer, can convey the truthful, the real, the likeness of the thing itself. The photograph is the eye of Nature which never closes and never loses an image once cast upon its retina.

"What painter can trace the absolute likeness of the person like the lens which views neither with the favoring eye of the friend, blind to faults that may make the individuality of the picture striking, nor yet with the glasses of disfavor which exaggerate the faults and gloss over the comely parts, going as far wrong in caricature as the other in flattery. The people of the world have come to know this. They may not be entirely correct in their belief in the absolute truthfulness of the lens, under all conditions, but the work of the camera is now regarded by the people as the embodiment of truth. It may be possible, for the 'special artist on the spot,' to sketch a scene which never happened save in his own imagination, and in these days of yellow journalism to hand down to history a falsehood worse than any written one can be. That was possible, but now that the people have learned more of the cult and the craft of the newspaper world, and the sketches made by 'our special artist on the spot,' they have ceased to consider either as infallible. Now the public waits for the little view that some lens has caught at the very time, and preserved. Waiting for the truth and waiting for the report of the lens of the camera are one and synonymous.

"All here have had my own experience, I presume, in this matter and yet it never struck me until recently the immense value it will have to photography. Nothing but the photograph will, in the future ages, be regarded as reliable evidence of scenes and events possible to thus preserve forever.

"Even our hunting and fishing friends have come to ask our aid to help them prove their stories of the mighty catches, and the ordinary fisherman will ask the story teller with the photograph how far the fisherman held the fish in front of him when the snap-shot was taken. The public is surely getting closer to the real and great usefulness of photography, and in getting accustomed to it are demanding more and more of us. The ordinary man or woman, with the snap-shot camera, can get the picture that carries the likeness; but there is something lacking, and only the professional, the one who studies to get that lack supplied, becomes to the lay mind the artist, the craftsman worthy of his profession. They are getting closer to the trade itself, but at the same time they are getting added appreciation of the real artisan, which they never had while the craft was occult to them, and its higher grades, like the mysteries of the Chiela, high up in Buddhism, to the common Hindoo. No amount of familiarity with the working tools of the profession will breed a contempt for the able craftsman, and no amount of amateur attempt will detract from the luster of worthily executed work of high merit. The photograph is common, but it is regarded as the one witness *sans* fear and *sans* reproach. It has taken a new position in the minds of the reading and thinking world.

"One hardly can comprehend how far this feeling has spread or the great use that has been made of it, especially in the Hispano-American war. Go with me to any railroad office in the country and pick up their advertising matter. What do you find. Pictures, pictures, pictures, and all of them photographic engravings from photographs. The shrewd managers have learned the lesson. They have found that the public want reliable evidence of things told of and have presented their star witness of the truth, the likeness of the lens, which is incontrovertible. There is now hardly a line of trade that does not turn to the camera for help. Words were made to hide the thought and sketches to begot it, but the lens tells the story straight and true. I have amplified this thought, for I believe along this line is the great growth of our usefulness to society and the world at large to be found. We can and we will preserve for history the facts of the times. In this connection I would call your attention to the fall, from the higher estate, of writers' words. The people, once inclined to superstition, will throw us as readily aside as they do the

fake sketch and description of to-day, unless we hold fast to the truth of the lens. We have it in our power to dictate our place in the world, and let us do it. Opportunity has come and once within our grasp; we alone are to blame if it glides away from us.

"I would not weary you with this idea, as I desire to call your attention to another and very remotely different one, yet associated with it in the future. If we are to become the chroniclers of the future, the only reliable witness of history, we should see to it that he who first conceived the idea of the lens should have a fitting place in the halls and on the walls of our Nation's great places. During a recent visit to Washington and the Congressional library, that grand monument to the heroes of art and literature, I saw the names of most of the famous authors, historians, novelists, poets, and men from every field of the art world; but nowhere in the great building was the name of Daguerre, the man who made this Convention possible, the one to whom we must all look back for inspiration for the future. I asked why his name was not there, and no one seemed to know. Just neglect, and a neglect that we should no longer permit to exist. I was very much pleased to find, however, that we were not entirely unrepresented at the Capital, for just outside of the Smithsonian Institution is a heroic monument to Daguerre. It was formerly in the building itself, but was too vast to show well there, and now is placed to better advantage, in common with the statues of the world's most noted men of medicine, the bar and the pulpit. That is as it should be, but it occurs to me that we should insist on having his name in the Congressional Library. It would, no doubt, interfere with the scheme of decoration to suggest a bronze tablet and be rejected by the Curators and those in authority, but I believe the earnest request of this Society, through its officers, and a signed petition to the proper authorities, would result in having Daguerre's name inscribed on one of the vacant tablets in the room where the only display of photographs is made, and that display is a most inadequate one."

The President then read the programme of entertainment at other than business sessions of the Convention, and announced that Professor Griffith would be at the School of Photography in the afternoon.

Mr. G. G. Rockwood: "Mr. President, would it be in order for a committee to be appointed to carry out the suggestion made by Mr. Hayes concerning that remarkable omission in the public library at Washington? You remember that Mr. Hayes said in his address that, while all the great inventors and discoverers had been remembered by monument or tablet in that library, yet the man who had invented that art which has done more to revolutionize the arts and sciences than almost any other art, has had no monument erected for him there of any sort. I make this suggestion, if it meets your approval, that a committee be appointed to inquire into the possibility or advisability of some action by the National Association to supply that remarkable omission."

President Guerin: "Would you present a motion to that effect?"

Mr. Rockwood: "I would be glad to present a motion that a Committee be appointed to look into the practicability and advisability in that direction—that is, to obtain information as to whether it is possible that we may be permitted to place there at some future date some suitable memorial to the memory of Daguerre."

The motion was seconded and unanimously adopted.

The Chair inquired how the Committee should be raised, and was about to name Mr. Rockwood, the mover, as Chairman of such Committee, with power to elect his associates.

Mr. Rockwood: "Allow me to make a further suggestion. Mr. Hayes is entitled to whatever credit or honor there may be in the matter, as the inception of this movement originated with him, and it was through him that this House had the first information respecting the omission referred to. Mr. Hayes is therefore fairly entitled to the chairmanship. I would be very glad to act with him."

Mr. Hayes was then appointed Chairman and Mr. Rockwood made a member of the Committee, and President Guerin announced that he would elect the third member at a later time.

Upon request of Mr. Rockwood, his place upon the programme of Friday, July 21st, was changed to Wednesday, July 19th, it appearing that Mr. Hollinger, who had been assigned a similar subject for Wednesday morning, would not be present.

A member inquired if arrangements had been made for a question-box, and was informed that any questions submitted would be gladly received and placed before the Convention for discussion if handed to the Secretary.

On motion, adjourned until Wednesday, July 19, 1899.

WEDNESDAY, JULY 19, 1899.

SECOND DAY—MORNING SESSION.

The Convention met pursuant to adjournment, and was called to order at 11 A. M. by President Guerin, who invited the following ex-Presidents of the Association present to have seats upon the platform, viz.:

G. CRAMER, St. Louis.
W. H. POTTER, Indianapolis.
C. M. HAYES, Detroit.
J. WILL KELMER, Hazleton, Pa.

The Secretary read the following:

"WACO, TEX., July 15, 1899.

"MR. F. W. GUERIN, *President Photographers' Association of America*,
"Celoron, N. Y.

"DEAR SIR,—Here's success to the Photographers' Association of America. It has done me more good and stimulated my desire for bettering my work more than anything else could do. Sorry I can't be with you this year, and unless dead will certainly be with you next year.

"Again I say, success to the Photographers' Association of America.

"Fraternally yours,

"DEANE,

"High-priced Photographer."

The reports of the Secretary and Treasurer, which appear elsewhere, were read without details.

Mr. Brady: "I would like to know if that is the only statement the members receive of the financial condition of the Association?"

The Secretary: "That will be printed. I would also say that the Treasurer's books are open to any one that wishes to examine them. Some years ago we used to read the detailed items of expense, but we all got tired of that.

President Guerin: "The report will be published in the magazines, so that you all can see it. We have saved about \$1,000 in expense last year over previous year.

"We will now listen to an address by Mr. George G. Rockwood."

PRICES AND HOW TO GET THEM.

George G. Rockwood: "Ladies and Gentlemen—I am very sorry to present myself as a substitute for the brilliant speaker who was to address you this morning, Mr. Hollinger. I think you will all remember his wonderful sallies of wit and wisdom and the excellent advice he gave us last year; but, inasmuch as his subject and mine seem to be identical, that is, the consideration of prices, I have consented to try and fill that absent gentleman's place.

"In order not to take up too much of your time I have jotted down a few of my ideas, so that I will not grow verbose. It is very unsafe to put upon the platform an enthusiast of any kind. He runs away with himself and tires his audience. So I will take the liberty of reading for, perhaps, three or four minutes, what I have tried to think up on this all-important matter of prices.

"No practical question has ever come before us for discussion which has elicited more diverse opinions than the one of prices. Many think that some one system could be of universal application. This view may be erroneous.

"Price depends entirely on place, circumstances, experience and merit, as in all other occupations or professions. Surely the newly graduated practitioner of law or medicine would not expect the same fee as the experienced expert of a quarter of a century. In a manufacturing town, in which the inhabitants or a large majority were in receipt of a bare living income, they would not pay the same prices for photographs of even the first quality as in cities where there might be many wealthy people. Here, certainly, the principle of the nimble sixpence must prevail, and larger sales with small profits be the rule. Then, again, comes the question of expenses. I find many photographers in the smaller towns much more prosperous in proportion to the amount of business done than those in large cities. In the latter the expenses often are prohibitory to the attainment of a profitable result. If I make my lowest priced photographs at \$6 per dozen, and some of my friends from the smaller towns get only \$3 for the same quality and quantity, they should be consoled with the thought of difference in expenses. Many of this audience do not pay as many hundreds of dollars for rent as we pay thousands. How would you like to meet a disbursement of \$4,000 a year for rental only? Then we have six months of paying business, while most of you have but a slight falling off in the summer and mid-

winter months. Then, again, as I have intimated, is the matter of skill and experience. Possibly my forty years under a skylight, with repeated visits to Europe, studying in the great foreign schools of art, entitle me to a larger compensation than the tyro in the art.

"These suggestions are all general, and are apart from special circumstance, such as the competition of the peripatetic or wandering photographer, who attempts to "skin a town," as the saying is, by moving in, reducing prices, and, when the sensation of his coming has subsided, moving out. Such occurrences can only be met by keeping up with the art, making such excellent work that our patrons will not be tempted to leave us. The public is not such a fool as we are apt to consider it, and there is in almost every town a spirit of loyalty towards the deserving in all kinds of business.

"The roving photographer doesn't come to conventions. You have the advantages that this Association extends to its members by seeing the best work done on earth, receiving instruction in the practical or mechanical processes, and being educated on the art side by the distinguished men who have addressed you in the various schools and lectures. The man equipped as he will be here is in no danger from unprincipled competition. Strong men don't resort to it, and strong men are always in demand in all kinds of business.

"I started, as a basis, with the lowest priced picture, at \$6 a dozen for albumen prints. I discovered, after a while, that I was making a very few, and I supposed that the average price of pictures was more than the price announced. Of course, this was the result I intended to accomplish. I did it in this way: When a patron inquired the price of pictures, I or my clerk always answered the patron promptly, when asked, 'How much are your pictures?' by responding, '\$6 for this style, which is the general style in use.' We never attempted at the start to get them away from that, nor did we endeavor, by showing them a round-cornered card, and pretending or claiming that upon such a card a more expensive result was produced, and upon that claim charging them 50 cents or \$1 more. If desired, we showed them a better style, such as platinum and matt picture, the price being \$6 for albumen pictures, \$8 for matt pictures, \$12 for platinum, \$15 to \$18 for carbons.

"Last winter I was curious to find out what the average price was which we secured from every man who came into my front door with the intention of purchasing or ordering a dozen cabinet pictures, ostensibly at \$6 a dozen. I took the average for twenty-four working days. At the end of that time I found that the average price for my pictures had been \$11.34 a dozen. I mention this to encourage you in showing to the public a very high standard of work.

"The public is most sensitive upon their personal appearance; more sensitive upon that point than any other that rules human nature. You may find an old man or an old lady coming in who has not looked into a looking-glass in ten years, any more than just to give a little touch to the hair; but that man or woman, when approached upon the side of their personality, or their personal appearance; when you get them under the skylight—I am sure we have all had the experience—that man or woman will fix and prink a great deal more than young people. I mention that to illustrate the fact of this peculiar sensitiveness of human nature with which we deal; this vanity of personal appearance. So that if you present to them a high grade of artistic excellence in your work they will make sacrifices to possess such a picture as a personal gratification; not only a gratification to themselves, but a matter of pride in behalf of their family. An incident comes to my mind at this moment: A lady came in with her child and said, 'Mr. Rockwood, I can hardly pay you \$6 for my little girl's picture, but' (looking at the platinum pictures), she added, 'I must have one of these pictures if I have to cut off some of my household expenses.' I was rather sorry to have her make such a sacrifice, and being a personal acquaintance, I made a concession in price for her. But that illustrates the fact that they do want the very best.

"And now if I could run up to \$11.34 on an average on pictures, you see what is possible in the way of tempting the public. There was no mistake about these figures; that average did not include a single copy; it did not include a single enlargement, or the increase of an order outside of cabinet size pictures. While there were a great many that were tempted into life sizes, enlargements, etc., not one single case was there where such were counted in. In addition to that, there was a large number of Salvation Army people, during that month, whose pictures I made for \$3 per dozen. I am a great admirer of that grand woman, Mrs. Ballington Booth. She is a very dear and close friend of mine (applause), and for her sake, and those people who are with her, I made this concession in price at that time, which was a good while ago. During that month there seemed to be more of these Salvation Army people come into our gallery than we had had in a great while; but notwithstanding that fact, the increase was just what I have stated to you.

"So, in the art, we cannot as a body fix upon a single, specific agreed rate, by which all shall be guided in their prices. It is a question of location, a question of the character of your *clientèle*, and a question of artistic excellence.

"There are not too many photographers. If I had a dozen sons to-day, and I

found that they possessed at all the artistic element, I would do all I could to bring them into this wonderful art of ours; that is, if they had the enthusiastic temperament required for it.

"As stated, I sum the matter all up under these three heads—place, circumstances, and artistic excellence. Thank you." (Applause.)

President Guerin: "Mr. Pirie Macdonald will now address you on the subject of State and National Conventions. I do not think he needs any introduction."

STATE AND NATIONAL CONVENTIONS.

Pirie Macdonald: "Mr. President, Ladies and Gentlemen—Mr. Rockwood was just saying that if he had twenty sons—(Mr. Rockwood, twelve)—yes, twelve; I beg your pardon, that is not quite as bad, he would have them all photographers in all probability. I am of a very different opinion myself because, if I had twelve sons and they were all like me, you folks would not have any rest until the end of time on the National and State Association question. I had a little throw at this subject at Detroit, and we had another little confab the following year here, and I have had to stir you up from time to time. Just to-day I got a note from a man to whom I had written, the Secretary of a State Association, giving me an idea of the scope of their work and of the membership. Very few of you, if you live in the East at any rate, have any kind of idea of the growth of the State Association of to-day; you in the West, in Ohio and Indiana—where is that place that Clarence Hayes comes from? (A voice.) Michigan. And in Michigan, of course, know the value and power of State Association. The work that is being done by them, we of the National Association for a number of years have very studiously kept our noses out of, because we knew it was rather strong medicine for us. The work that has been done by the Ohio Association no one can gainsay. It is an admitted fact that they have done more than any other one State Association. As a matter of figures it will surprise a great part of you, in all probability, to know that I have reports from nine State Associations out of a possible twenty-two, and that the membership of the nine Associations that I have heard from rolls up to 1,720 people, while the biggest paid membership that the National Association has ever had was 915. You know we have stood one side. We have thought we had the name of the country on our letter heads and that we have been in existence so long a time that we were 'it' but mark me that if you don't pay attention to the State Associations, they will be 'it,' because they will chase you and they will catch you sure as you live. The most radical, and the one thing that was not fitted into our ideas as members of the National Association, has been the growth of the salon principle. (Applause.) You Ohio men shut up! Ohio men always clap when we say that.

"A great many people have been so directly interested that it is thoroughly impossible to separate them from the idea that prizes were the only thing that held this Association together. The most striking illustration that we have to the contrary is the fact that last year we had, oh, I don't know—but lots of them anyway; barrels of prizes, and we had about two hundred people less than this year, with the very short prize list we have here. That, to me, is the most conclusive proof of the feeling of the people—the feeling I say, of the people, because you are a part of our people, and I am a part of you. The feeling of the people is in favor more thoroughly to-day of the educative principle than ever before. You find people going down through that exhibit 'rubber necking,' getting up against exhibits and trying to find out what it is in this picture and that picture that makes them noted, what there is in it that makes the picture draw a crowd. We find pictures that draw a crowd in the middle of the day and that still draw a crowd at the end of the day, a crowd of second wind people come up to find out what there is there that the other people have admired so much; and that is one thing that underlies the principle of the salon. ■ ■ ■

"The ideal State Association—by the way, I have written all this thing out. Do you know when I was about twenty years old, two or three years ago, I wrote it all out. (Laughter.) I know what you're laughing at; you do not believe it, but it is so; I wrote out just such a talk as this, but got all mixed up in my notes, and since then I have always carried my notes in my pocket in case I might forget—but there is this thing in regard to the salon principle and State Associations. I believe the idea of most State Associations is, not a society that is going to give medals, but a society that is going to collect pictures, make collections that may be entered in competition, one State with another, before the National body, which is a representative of State Associations, which is not a remnant and dregs of some effete body, but is something that is brand new, and something that is composed of people who are going to carry on the work properly; I do not believe it is at all essential to have all this. I believe it is infinitely better to have less and have it better. I believe that you all think this is so, judging from the way you hammer away at these collections; they are smaller and they are better than we have ever had before."

"But I want to tell you one thing, that before you are through with it, if you do not pay heed to your State Associations, if you do not pay heed to some kind of

amalgamation scheme, you will find that they are coming to maturity by themselves and will leave us out in the cold; and this Association has been too good for me to see things going that way without a protest.

"We Americans have in us the blood that distinguishes us from every nation in the world. Our English cousins all admit that we are 'good.' One of the best examples of the spirit I have referred to is contained in a story told me by a friend of mine, Lieutenant Cardon in the navy. He told it of one of these tugs that lie around New York harbor—I remember it very well, because one day Sid Wells and myself went out on it. Sid had a strong stomach, while I was very sick, and I shall never forget the *Osceola*. Well, the *Osceola* was sent down to convoy a couple of colliers. All she had on was a couple of 4-pounders and a little scrap of a crew. A young man named Joe Purcell, who was a lieutenant in the navy, in charge. As they were going out and had gotten beyond all possibility of retreat, all at once a couple of masts loomed up in the distance, coming lickety split for them. Purcell saw them, and knew instinctively that they were not in one of our vessels; he had never seen such masts in our navy, and he divined that they must be on a fighting ship of the enemy; so he at once signalled to those colliers to come down to the fleet, while he went with his little handful of men and two 4-pounders straight against this vessel which for all he knew carried thousands of tons. He went up to it with the belief that there was no possibility of getting out of it; well, this is the spirit I am talking about. The sequel to the story is that it was the *Amazonas*, one of our new vessels, and when she run up her colors, Joe Purcell—well, he was simply an American, as we are—and I tell you fellows you have got the spirit, and you can handle just such a question as this; and if you do not handle it you won't be Americans, because you'll be licked."

President Guerin: "The next order of business is 'Informal Discussion of Business Methods' led by A. L. Bowersox, who will now address you."

BUSINESS METHODS.

DISCUSSION LED BY A. L. BOWERSOX, DAYTON, O.

"Mr. President, Ladies and Gentlemen: I have been asked to say a few words on 'Business Methods' or 'Business Principles,' and my friend, Mr. Rockwood has pretty nearly covered the ground I intended to speak on. It has always been a desire of mine, when I met a photographer, to find out something about his methods of doing business. I think that is one of the vital things we are all interested in. For that reason I consented to lead this morning in this short discussion; but there is another side to the question, which makes me think of a little story. I was called upon last winter to speak to about a hundred boys in the Y. M. C. A. I was trying to impress upon their minds the necessity of being thorough, and so told them this little story: A business man wanted a boy; he advertised for one, and in the course of an hour or two he had a dozen or more applicants. The last boy that came in, he told to come in the morning, and he would then let him know his decision, but as the boy walked away he called to him, 'Come back; you will do; I will take you.' The boy asked him afterwards, 'Why did you decide on taking me so quick?' He replied, 'When you walked away I saw that the heels of your shoes were shined the same as the toes; I saw you were thorough, and I took you.' Immediately all the boys in the front row looked at my shoes."

"We have an establishment in our City of Dayton that I think is a model for any factory in the world. In fact it has the reputation of being the finest and most efficiently conducted of any in the United States, if not in the world. When I came to Dayton, fifteen years ago, this same company was working in two rooms across the alley from my studio; in a very short time they occupied the entire floor, and finally the entire building, and now their factory and out-buildings occupy acres of ground. The institution of which I speak is the National Cash Register, and they employ eighteen hundred people to-day in their factory alone. The reason I have called your attention to this company is on account of the superiority and acknowledged excellence of their business methods, which they have carried into the smallest details. They have a system which is unequalled in this country, and, as I have said in the world. This is evidenced by the fact that they not only manufacture in great numbers their product, but they have actually created a demand for it; they are selling what there was no demand for until they, by their energy, their enterprise and their wonderful system, made a demand for their goods throughout the civilized world. Among the features of the conduct of their business which they have found most valuable and helpful, is a 'Question-Box,' or as they call it a 'Suggestion Box,' which they have in each department, and into which the humblest employees, the very smallest boys are invited to drop any suggestion, with his name attached, as to the possible improvement in the methods or machinery of the business. These suggestions have been laid before their Board, which meets daily at the noon hour, as do a board of directors in a bank. This Board carefully weighs all these suggestions, and if they are thought worthy of adoption, the one who made the approved suggestion is awarded a prize, so that in this way the humblest employee, the smallest boy, as well as

the manager or foreman of a department in the factory, has an equal chance for promotion and recognition, and of being paid for his interest in the business and his knowledge and skill. A week ago Saturday they held their prize distribution; they called their employees, with all their friends together, amounting to over four thousand people, and took them out in the grove, and gave them a supper; they had four tents there, and they fed those people. I am told that they spent some \$16,000 in entertaining them that one day. They wound up with an exhibition, showing lantern slides; and they showed three screens at one time. and I want to tell you that they own their own instruments, too; they did not have to borrow; they had all the photographers in the city who knew how to make them, busy making lantern slides; they had their own photographers also at work for some time beforehand.

"I speak of this to show you the magnitude of their undertakings, which have always been conducted on strictly business principles, under an enlightened and liberal management. Such a system must win in the end.

"Anybody can start up in a business and make a little money, but it is the continual plugging away that counts—systematic and sustained effort. As photographers, we must have system above all things else, from the time the order is taken until the negative is registered away for future use, and on this, I claim, depends a great deal of our success.

"As Mr. Rockwood has told you, the prices you get depend upon location and on yourself. If you think your photographs are worth \$6 a dozen, if that is your price for them, ask that for them; if you think they are worth half that, ask that; but you must know what it costs yourself to produce them. If you don't, you are not a thorough business man. You must know as nearly as possible what your pictures cost in order to know what to charge for your work.

"I think one of the first and most important requisites is to have a system in business.

"Again, when you buy anything, discount your bills. If you do this, and will take time at the end of the year to reckon up and see what you have thus gained, you will be surprised at the amount of money that you have left in your treasury from this source alone, paying cash or discounting bills.

"Another point. When a customer comes in you want to size him up, as it were; show him your work, start him out on something that you think he will like, and then draw him up a little higher, and after you have made your sitting, and the proofs are brought in, instead of selling him a half a dozen or a dozen sell him a dozen of the kind he first wanted and a dozen of something better. You can do that by making an extra print, say, on platinum, or whatever you did not show him in the first instance, and framing it up nicely or showing it on a beautiful card. You can go around the hall here and find something new in that line. That is the way to increase an order. I think there is more, generally, in that, in increasing orders from present customers, than in increasing the number of customers.

"I think a great many photographers probably forget that the expenses in a department must be watched. If you make a great deal of money, don't rush in and spend it, but try and save a little. I don't believe that any man has ever made much of a success, or become wealthy, or well-to-do, that did not know how to save. (Applause.) If you have earned a \$5 bill and you spend every cent of it you have not saved any money, and consequently you have not been successful to that extent. So I believe in saving the pennies and saving the dollars, and that can be done by looking around your department and trying to find the little waste places where the stock is wasted here and there.

"Another point I want to make is the necessity of keeping your establishment in good condition. It must be renovated; it must be gone over at least once a year. I have only been in my place five years, and I have had it redecorated three times, and have also made additions from time to time. I think that is just as necessary as to put new pictures at your front entrance or in your show-case at the foot of the entrance—just as necessary, because your customers, coming in from time to time, want to see a change, and if they see you are progressive they will continue to come to you. People want to spend their money with successful men. For that reason you want to keep up the establishment. If you allow it to become a museum or a junk shop you will soon drive away your customers to somebody that has the knack of keeping things sweet and clean.

"Now, I am only to lead you off in this discussion, and I hope you photographers will take this opportunity to say in what we, as a body of photographers, can advance in business methods. If I have done just a little in this short talk to lead you off and get a good discussion I am well repaid for the few minutes I have spent of your time. I thank you." (Applause.)

President Guerin: "Mr. Rockwood wants to say a few words on housekeeping, which I have no doubt will interest you, and especially the ladies."

Mr. Rockwood: "What I was about to say has been most admirably said before. There is an incident in my business career which I would like to give you. I left New York and went into a certain western town to call upon a man who had been quite famous as a photographer. I expected to have my breath taken away when I entered

the door. I got to the foot of the stairs. It was in the winter, and the door was closed. The glass was pretty badly soiled; still, I thought to myself, that is an accident. I opened the door of the hall. There was a rope matting going up the first flight, and in it there were three distinct holes. In the first place, it was a rope matting, which ought not to be there; but, being a rope, the matting was worn out and ought to have been replaced. As I came to the head of the stairs, there hung a print so old that it was absolutely yellow. It could not have been less than fifteen or twenty years old. I was still more surprised, of course. I went into his gallery and greeted him heartily, and he greeted me the same. 'Well,' said I, 'old boy, how is business?' 'Oh, business! there is no business; we don't have any business.' I looked around upon his reception-room. There was not a picture hanging there that I would like to swear that had been made more recently than five years before. The whole place was just a little bit dilapidated. If I had been going in there as a customer I would have turned on my heel and walked out, because I had that morning, before going into this establishment, been to another where everything was clean and nice; the pictures were all fresh; there was not an old picture or a stained picture to be seen. I had asked the photographer there some questions about his business, and his reply was, 'Well, I am sure I can't complain.' The effect on me of this visit to the dilapidated gallery was miraculous. When I got home—I was then up a couple of flights—the first thing I did was to look at the glass in the show-case. Well, I found that was clean. The stair carpet was in very good condition; had been swept that morning. I got up in my gallery. At the head of the stairs there were some pictures which had been there two or three years. I made a mental memorandum concerning these. I went inside and looked around my gallery. There were a half dozen pictures that had been hanging there four or five years. I took down every one of them, and, for fear of temptation, I destroyed them on the spot.

"If there is any one thing I can claim a little bit of distinction for it is my good house-keeping in my business. That feature has often been noticed and favorably commented upon; and when ladies come in with elegant dresses, I have not seen them draw up their dresses and look around to see if they were going to be ruined. Now, you can make your application to the story." (Applause.)

President Guerin: "Is the President of the Nebraska Association here? We want him to say a few words about that Convention. (There was no response.) Is there any one who wishes to speak on this subject?"

Mr. Minns, of Akron: "I will just give you a little experience of mine. A lady came into my studio; she had admired a certain picture that I made, and was considering having some taken like it. I informed her that it was very trying to a face, and only a certain kind of face would admit of that treatment. She was very anxious that I should try it in her case. I did so, and she was very well satisfied with the proof. She ordered from that proof, also my other style. They were both printed in platinum. She had given her order without saying anything about price, and when I delivered them, one kind I charged more for than the other. She said to me, 'Is it the material which is much more expensive in the one than in the other?' I said, 'Oh, no! No. They are both the same kind of material; but I hope you didn't climb those two flights of dark stairs to buy material. You could get that at any dealer's; you could get the picture then, made from the material you had bought, by any tyro.'

"I went on to explain it on this principle: 'Madam, you may have a sick child; you call upon one man to drop a few drops of chemicals into a tumbler; he goes away, and sends a bill, after your child has recovered. You pay it without a word, because it saved your child. You would not have yourself bought those chemicals and brought them to me, if I would pour them out for nothing.' The lady saw the point; she was convinced that she was carrying away something that was not exactly material; and that is what I think we will have to put into pictures if we sell them for prices.

"I have the honor of the acquaintance of that man whom we looked for to-day, Mr. W. M. Hollinger, and I had a little conversation with him; he was so kind as to tell me in that conversation, on his way home, when I met him last year, about the condition of his business. He said: 'Of course, we are not doing a great deal now, but we have six Ohio boys, our people, in our employ; three of them will go away this afternoon down to the shore, go where they have a mind to; Saturday night, however, they will get their pay just the same.' I thought that was a nice position to have. He added: 'We are not going to discharge one of them, if we don't make a sitting till the fall trade opens. It is dull in the city now, they are all going to get their pay every Saturday night, because we can't spare them. They possess skill; they do what we ask them, and we aim to treat them so they will remain with us and give us good service.' You will understand from that, that there is something put into Mr. Hollinger's pictures besides material, and that is the thing that is selling them."

President Guerin: "If there is no other discussion of this important subject, a motion to adjourn will be in order. I desire first, however, to announce the following:

"To-night we will have a theater party, given by the American Aristotype

Company. You are kindly asked to be at the door of the theater promptly at 7 45 P. M. The entertainment is at the Celoron Theater here, and it is important to get there early, so as to keep the entire party together.

"Professor Griffith will lecture this afternoon at the School of Photography at at 2.30 P. M. sharp."

On motion, adjourned.

THURSDAY, JULY 20, 1899.

THIRD DAY—MORNING SESSION.

The Convention met pursuant to adjournment, and was called to order at 11 A. M. by President Guerin.

The President announced as the first thing in order reports of committees, and called upon Mr. William H. Allen, of Detroit, Mich., Treasurer of the Jex Bardwell Fund, who made the following report:

REPORT OF COMMITTEE ON JEX BARDWELL FUND.

"Mr. President, Ladies and Gentlemen of the Photographers' Association of America: Most of you are aware of the fact, and for the benefit of those who are not aware of it, I will explain that two years ago at the Convention, effort was made to raise funds to buy a home for Mr. Jex Bardwell, of Detroit. The object in so doing was to repay an obligation which was felt toward Mr. Bardwell on account of services rendered in protecting the fraternity from some invalid or useless patents, including the bromide patent. Through evidence given by Mr. Bardwell those patents were shown to be groundless, useless and invalid, and the fraternity was saved from debt or burden that would have been otherwise imposed upon you, and what the result would have been no one can tell, even the present generation. An effort was made, as I say, to buy Mr. Bardwell a home, but the amount raised has proved insufficient. The whole amount of money collected for this purpose as shown by itemized statement accompanying this report was \$264.18. That would not buy much of a home of the kind that was designed. There was another subscription of \$100 made conditional in the event that he could be provided with a home, that is in some Home, this additional \$100 would be given. He preferred, however, staying in Detroit in his old home; so that the conditional subscription is yet to be forthcoming. It will be paid in case of necessity. The amount raised, as stated, being insufficient for a home, it was urged upon this committee by letters and otherwise that something should be done for Mr. Bardwell which would be of present benefit or advantage to him. He was in arrears for rent. He was situated so that he could get his living; he had a little room or building, a very small affair on the rear end of the lot, and on which he was paying or should have paid \$8 a month rent. He was in arrears for one year's rent ending October, 1897. So, upon consulting with the other local members of the committee, Mr. Hayes and my brother, and after repeated urging on the part of others to give him the benefit of this fund while he was living, instead of attempting to buy him a home, which seemed impossible, I paid \$75 for rent in October, 1897. In January, 1899, I paid \$72 rent up to that time.

"Since then, about five or six weeks ago, Mr. Bardwell's invalid wife died, and there was no place to bury her. So her home was bought in Elmwood Cemetery, for which I paid \$60. The old gentleman is failing very perceptibly, and the probabilities are that he will occupy a like home before long in the cemetery. There is a balance to the credit of the fund now on hand of cash \$54.68, as shown by accompanying statement in detail of receipts and disbursements, all of which is respectfully submitted, viz.:

DETROIT, MICH., July 15, 1899.

Mr. WM. H. ALLEN, Treasurer.

In account with THE JEX BARDWELL FUND.

		RECEIPTS.	
			Dr.
1897.			
Aug. 14.	To cash received.....		\$159 18
11.	" ".....		10 00
Oct. 11.	" ".....		16 00
14.	" ".....		10 00
Nov. 15.	" ".....		13 00
Dec. 8.	" ".....		17 50
1898.			
Mar. 2.	" ".....		38 50
			<hr/> \$264 18



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MADONNA AND CHILD.

BY KNAFFL BROS., FROM THEIR COMPLIMENTARY EXHIBIT AT THE NINETEENTH
ANNUAL CONVENTION, P. A. OF A.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

DISBURSEMENTS.

1897.		
Oct. 14.	By paid Mrs. Kouger for rent.....	\$75 00
Nov. 18.	“ “ Raynor and Taylor for printing	2 50
1899.		
Jan. 9.	By paid for rent.....	72 00
July 3.	“ “ lot in Woodmere Cemetery.....	60 00
	“ balance on hand.....	54 68
		<hr/>
		\$264 18

July 15, To cash on hand, \$54.68.

WILLIAM H. BARDWELL, *Treasurer.*
Jex Bardwell Fund.

The Secretary read the following telegram:

“ST. LOUIS, Mo., July 18, 1899.

“F. W. GUERIN, President,

“Photographers' Convention, Lakewood, N. Y.

“When you get the boys' attention please take time to mention my regrets, most sincere, that I cannot be present, which would indeed be pleasant, with them this year. May the '99 meeting eclipse all former records, having greatest interest aroused; that in the four corners of the world our art may gain new honors is the wish of

“JULE STRAUSS.”

Also the following communication from the Treasurer:

“*Photographers' Association of America:*

“Ladies and Gentlemen: While we are puzzling our brain and making every effort to improve the standard of our Association, and to make our Conventions more elevating, successful and more satisfactory to all our members, we are overlooking one of the most important points necessary to our success, I might say to our existence, namely, the receipts of the Treasury.

“Having three years' experience as treasurer, I feel I can address you on this point intelligently. In looking over the accounts of Treasurer Carlisle, I find the finances the same as now. For a number of years we have not given thought to this end of our Association, feeling satisfied that if we went broke, our friends, the manufacturers and dealers, would come to our relief and give us a start. It has been a toss up as to whether each Convention held would pay its own expenses or whether we would have to beg. This state of affairs seems very unbusiness-like to me, but, as all questions can be argued from many sides, I would like to bring this question before you for argument, feeling that a better condition of affairs can be evolved thereby. It would seem at first thought that the pride one feels in a National Association such as ours (not to mention its educational advantages gained through our journals by every photographer in the land) would be sufficient inducement for all in our profession to contribute, annually, the small amount charged for dues; but such is not the case. Many of us stand back and let the other fellow do it all, while we stay at home and read the journal, profiting muchly thereby. Some years the other fellow stays at home, lets his membership lapse, and then there comes a shortage in the treasury. Our membership is a shifting one, changing with each location of the Convention, our fees being so low that we can better allow them to lapse than to remit our dues if we do not wish to attend, or exhibit. In order to avoid this loss to the Association, I would suggest raising the membership fees to such a price that we would consider them of sufficient importance; that we could not afford them to lapse for the amount of the yearly dues. I would also suggest that the employees pay small membership fees. I make this suggestion simply for a base of argument, feeling that something can be brought out of it to better the affairs of the Association.

“Not being a candidate for re-election, I feel I should also call your attention to what I consider our careless method of placing our finances in the hands of inexperienced men each year. Our custom of electing a Treasurer to serve for a single year is unjust, both to the Treasurer so serving, and to the Association. We blunder through our first year, gaining experience to fit us to handle this office successfully, and then we are either advanced or turned down, and another inexperienced man takes charge of the finances for a year. I would respectfully suggest that we elect our Treasurer for a term of three years, gaining thereby two years of good service.

“Trusting the members present will consider these matters of sufficient importance to argue them and pass upon same, I am,

“Yours respectfully,

“G. W. VARNEY,

“*Treasurer Photographers' Association of America.*”

President Guerin: "Do you wish to take any action, gentlemen, in reference to this matter of Treasurer Varney's? If not, the next thing in order is the appointment of Committee on Nominations of officers to serve for the ensuing year. I am placed in a very peculiar position here. We have appointed six, something unusual in this country; but we have since our last meeting acquired several little islands. That is the reason we have the two extra members. The Nominating Committee will consist of the following gentlemen:

"COMMITTEE ON NOMINATION OF OFFICERS.

- "C. M. HAYES, Detroit, Mich.
- "G. G. HOLLOWAY, Terre Haute, Ind.
- "WILLIAM A. WEBSTER, Waltham, Mass.
- "J. B. SCHRIEVER, Emporium, Pa.
- "PIRIE MACDONALD, Albany, N. Y.
- "WILL MOSES, New Orleans, La.

"I think if that Committee cannot agree and will ask me for another man, I will select one for them.

On motion, the communication from the Treasurer was made a special order of business for Friday morning, July 21, 1899.

G. G. Rockwood: "Some action should be taken on so important a question as that seems to be. This communication was prepared by an experienced man, who has passed through the identical difficulties which he wishes us to avoid in the future. It is not a good plan for such a position to be held by a new man each year. He only learns his business, so to speak, or his duties, at the end of the year. I think this is a very important matter, which should be carefully considered and acted upon. The Treasurer certainly would not have made so elaborate and so good a report if he had not thought the matter over very earnestly."

Mr. Hermann Schervée: "I would like to ask if there is any provision in our Constitution regarding the election of officers? There certainly must be some provision as to whether an officer is to be elected to serve for one or more years. If so, I think it would be necessary at this time in order to facilitate action upon the matter to-morrow, for some one to offer an amendment to the Constitution. If the Constitution provides that the term of office of the Treasurer is one year, then I propose to offer an amendment to the Constitution."

The Secretary read the following:

"Article III, Section 1. The officers shall consist of a President, First and Second Vice-Presidents, Secretary and Treasurer, who shall hold office one year from the first day of January following their election, or until their successors are elected.' It would be necessary to amend the Constitution."

Mr. Hammer: "What provision is there in the Constitution with reference to amendments? Is it necessary in order to change the Constitution to give notice one day before voting on it?"

Mr. Rockwood: "Notice of proposed amendment must be given the day before."

The Secretary: "It may be well to read the article. It is Article V of the Constitution, viz.: 'The Constitution may be altered or amended by a vote of three-fourths of the members present at any regular meeting, and notice to alter or amend the same shall be given at least one sitting before a vote thereon.'"

A Delegate: "Is there not some rule governing the number to be appointed on Nominating Committee?"

President Guerin: "I think we may have as many on that Committee as we may wish."

Mr. Hammer suggested that a committee be appointed to bring in stragglers from the outside of the Convention enclosure. The Chair appointed Messrs. Hammer and Lancaster as such Committee. The President announced as the next order of business an address by R. P. Bellsmith, of Cincinnati. Mr. H. S. Bellsmith informed the Chair that the gentleman was not present. Consequently this number was passed.

The Chair announced as next in order "Informal Discussion," led by J. S. Schneider; topic, "The Illegitimate in Photography," and introduced Mr. Schneider. (Applause.)

THE ILLEGITIMATE IN PHOTOGRAPHY.

BY J. H. SCHNEIDER.

"Mr. President, and Ladies and Gentlemen: About two weeks ago I got a letter from the Secretary of the Association requesting me to prepare an address on the subject of 'The Illegitimate in Photography.' The Secretary wrote, 'Programme is out, and no excuses go.' So, of course, I had to go to work and do something. I will not, however, keep you but a very few moments, and if what I have to say shall prove of any interest and elicit discussion the object of my paper will be attained. (Mr. Schneider then proceeded to read his paper.)

"In the few remarks I shall make on the illegitimate in photography, with the intention of arousing discussion, I will have to begin with the purpose of photographic conventions. In brief, we meet for improvement, and to improve we must observe the work of others, as the work displayed is, or should be, their best effort, and when we have the best efforts to study there is always something to learn. In speaking of best efforts, I come to one class of the illegitimate, and that is the so-called freak or accident. If we are gathered here to reward careful, painstaking, conscientious work, how can we consistently reward the result of an accident or failure? (Applause.) And that is just what has been done on some occasions. In one instance, the party receiving a reward or prize said he had thrown the negative away, being so much undertimed as to render it utterly worthless. Seeing certain effects in a painting, he had one day brought it from the waste-box, and, making a print, which, of course, was flat, weak and gray, called it 'Winter Twilight,' or some such name, although the exposure was made in midday. Now, was it improper to award a prize to that picture? Some might say the man deserved it for taking advantage of the effect to produce his picture. Others would say, 'What is the use of our trying to improve in our work by careful study when a failure gets the prize over our honest efforts?' (Applause.) We surely cannot improve by having a failure held up to us as the standard of excellence. Under this condition, the work was not legitimate.

"Now, in another connection, I might mention the etching or other work done on negatives, by which effects are sought after that cannot be produced by pure photography, such as the introducing afterwards of water, rocks, trees and various other effects. In most instances it would have been better left undone. Whether done well or not, it has no place in photographic competition, as a draughtsman or an artist is one thing and a photographer another. Such work might be entered in a class of its own, but should not be placed in competition with pure photography. As a man may be thoroughly artistic in photography, and, unless it is a special gift, may not be able to draw an object, no matter how many pictures of this kind he studies, therefore, at a convention for photographers, pictures containing other than that which can be produced by photography pure and simple should be considered illegitimate.

"Our intention should be, after seeing the best that can be produced with camera and plate, to try and equal it.

"The camera and plate is to be had. All it needs is brain and study back of it. It is the study of a lifetime to pose easily, light properly and get on your plate what you are after without taking the time to look around for accidents or learning to draw.

"Some times I have heard the word illegitimate applied to certain odd effects in lighting and printing, but if they are the results aimed at and produced by means within photography I should not consider them illegitimate, though often not in good taste.

"Photography is no longer in a primitive state. The time when chemical results alone were the greatest virtues to be sought for is past. We now have our plates given to us in uniform quality, with the necessary formulas to obtain the best results. Then why consider chemical results as the greatest point in awarding prizes? There has been such great progress made in a true art way that we should now look to the art quality as the greatest factor of merit in modern picture-making. It will be safe to say that a man acquainted with the necessary art principles, and starting out to make his picture based on this knowledge, will not stop at having his composition and lighting correct, but will look to his chemical work to properly render the effect he wished to produce. Therefore, recognizing one we may recognize the other.

"Another point that should be considered in this advanced period is originality, or individuality. To destroy this would be the greatest wrong. We should also always put as much of ourselves in our pictures as is possible, adhering still to the art principles involved. And I will repeat that any effect, no matter how odd, if it was one sought for knowingly and was obtained by purely photographic method, will have to be classed as legitimate.

"However, I do not believe in encouraging absurdities under the guise of art. I sometimes feel that a good many of us trust, in a blind way, to the word 'Art' to excuse us in making any kind of freak. (Applause.) By the word 'freak,' in this instance, I mean any effect produced outside of the limits of good sense and good taste. (Applause.)

Secretary Sperry: "In response to the inquiry made a few moments ago as to the number authorized on the Nominating Committee, I want to state that in the By-Laws, Article III, Section 6, it says, 'A committee to nominate officers for the ensuing term shall be appointed, to report at the next session,' which, of course, leaves the number open to the discretion of the President."

President Guérin: "We have some little time yet to spare, and I would like to hear from Professor Taft a little on the art question." (Applause.)

ADDRESS BY PROFESSOR LORADO TAFT, OF CHICAGO.

"Mr. President, Ladies and Gentlemen: If I had had but about two minutes warning for this, I would have preferred it, but I am glad of the opportunity to speak to you this morning. You know I have been talking considerably—perhaps more than some liked. I have distributed myself along through the gallery there, and if any of the photographers wished my opinion of their work I was glad to express it. I have said some rather mean things, perhaps, from your point of view; but I have been so encouraged in doing this, you have been so very kind and urged me so earnestly to say just what I thought, that I have felt perfectly free to express my opinion, as I did last night to one gentleman who asked me what I thought of his picture, and I told him he had some of the best and some of the worst things here, to my mind.

"Each one uses his own standard, which, to him, is imperative, just as in religion, conscience and duty; each one has a standard of his own. While sometimes I think that modern painters are the most narrow of people, there is good reason for it. Each painter is trying to do his work according to his ideal, to which he approaches as nearly as possible. What he achieves is the result of a great deal of thinking and a great deal of study on his part. He weighs everything in his own mental balance, and the thing which he does is therefore right to him; and consequently the thing which the other fellows do is usually wrong to him.

"We sometimes grow weak by becoming too broad. I admire the man who can appreciate work of every class. I think he is happier, perhaps, than the other man, because his horizon of enjoyment is greater; but the worker must necessarily have his own standard, and work by it. But, then, conscience may be trained, and it may be an artistic conscience. It is possible for every one of us to learn to make progress.

"I was surprised when I reached here, a few days ago, to find that there are two decided elements, two decided camps, among the photographers; that is, the artists in their line, and the imitators of the old. To some of us the old masters are the foundation of our faith. They are like the Bible to the Christian. We take it for granted that the old masters, as of the old prophets, that what they said was true, and we found our belief upon that. So when I find here that some of you consider that a mere species of rot—as it was so retailed to me—that the old masters had nothing to do with the modern masters, modern photography, I was a little startled. I hadn't just met with such expressions in Ohio last summer, where I received my very first experience of photographers—because I may as well confess that I know nothing about photography in general—as you will find out. I have had nothing to do with them in their personal relations, except last summer in Ohio. There I found a band of people so earnest, so appreciative of the artistic in general, that I took it for granted that that was the spirit of every photographer in this country; and so I was a little bit startled, shocked, when I heard such expressions as I heard yesterday in regard to great artists. There are artists in music, in literature, in painting, in sculpture, and, as well, in photography; but the further I get, the more I study, the more evident do I find it, that the same underlying principles apply in all these departments of artistic expression. You can follow the analogies, even into poetry, literature and music. There is art in position, there is art in music, there is art in light and shade. All those things follow the same rule. You simply change your manner of doing the thing, but the principles are the same. I found myself running up against rebuffs every few minutes, the most courteous, delightful opposition. I like it, too. It is delivered with intelligence, and I like to hear it. I have found that there is an entirely different standard erected by some of you for the photographer and the painter. I don't believe in that. You have not won me over yet; in fact, the more opposition I hear, the stronger I feel in my view, and I suppose the stronger you feel on your side—some of you. This is what I am worrying about—the fact that some of you consider detail everything in art. A certain amount of detail is good: a certain amount of detail is necessary in every art. Even in sculpture I like to see even the veins and the arteries throbbing, as was suggested here the other day; but I don't like to see a marble bust that you can comb with a fine-tooth comb; I don't want to see every hair; neither in the human face in a photograph do I care for a microscopic illustration of the pores. If you are going to do that, why don't you take a stronger lens, and make the pores still more evident? Why don't you make it scientifically accurate, to the most minute ramification of every pore? Why should you delight in representing every individ-

ual hair? Why don't you go farther and illustrate the follicles themselves? You could show each one of the hairs if your lens was strong enough, if you really believe that to be of interest to the public. You say the public demands such minute attention to detail. You say your first consideration is financial success. I grant that that object is legitimate enough. We have all got to live. But I claim that the public do not ask that. Many of you think they do; but you have trained them to it; you have told them that was artistic perfection; that every single wrinkle—except in a lady's face, where there are no wrinkles—have got to be represented, and counts so much towards success: I don't quite believe in that; I don't think that is a necessity. When I am looking upon the face of a friend I am not looking for moles, or counting the hairs that come out of those moles on the face. I am not looking for each individual wrinkle, or the pores. I am getting a general impression of that face in the mass. So let me say, the modern painter's effort is to discover that treatment which will best give the general effect as it may be gathered at a glance, seeking to carry most closely the illusion of Nature. And in your work, I think, first you will have a number of faults to correct, many of you. To begin with, avoid those black shadows which many of you think belong to the work of the old masters. That is a great mistake. Their black shadows were not black rings, which to me make a portrait very unpleasant. I look out at this audience and do not see the individual hairs. I don't see the moles on your faces, but I see you floating, as it were, in atmosphere, though I know there is solid ground underneath each of you, to be sure. Yet I don't believe in people being cut off in black vignette style. I don't feel the atmosphere surrounding your faces. I see the faces clearly defined—those nearest much more distinct and sharp than those further back—but even at this distance I see distinctly those. So, in a photograph, you want to respect that field of atmosphere. You don't want to make your figures portraits looking out of frames. Let them appear as if sitting back 10, 15 feet—whatever you think the natural distance. Be consistent, and you will carry with it all a persuasive illusion of truth. You will make those people believe the things are true to the reality. Some one has said he wanted to paint his pictures so they would look like 'folks'; so must you aim and have your pictures like 'folks.' I believe in that. That is the final object of your work. But we do not meet folks every day out in the sunlight, but oftener in a room like this. We very seldom see folks in a sharp, cutting light, such as that of the old-fashioned painter's studio. I don't mean the great masters, but imitators of the masters.

"Above all, you don't see babies, children, cut out as though made in cameo. What can be more beautiful than a little child dressed in light-colored clothing, just like a little tender flower, seated as Core, the photographer of children, does it? (Applause.) There is a man who puts feeling and sentiment into his work. I never met him. This is not an advertisement, but an expression of my personal feeling for his work. He makes every picture individual. Even in the framing of the picture he respects the character of his subject. So, when I see some of you taking graceful children, those sweet little faces, and making them look as though they were burned out all around with a hot poker, and the little arms looking like gas pipes in their blackness and shadow—little quadroons, although there is nothing prettier than darkey babies, perhaps, but that is not what we are trying to represent—I feel that the true conception has been missed. Such faces are not good characterizations. The treatment is entirely inappropriate to the subjects.

"To go on to other things with which I have been quite strongly impressed, I feel that, in general, exaggerated lighting of the head is a detriment; I feel that, as far as possible, a softer treatment of the head is a little better than those extremely round heads. I like strong lighting for strong, rugged faces; but ordinarily you will get nearer the illusion of life, the effect of Nature as you see it in the streets, where you meet people in public places, if you have a softer and more diffused light.

"Another thing which strikes me very unpleasantly is the cutting off of a figure within a frame. The frame should do the cutting off. We all have to be cut off in our time, sooner or later, it may be; but, to vignette the figure, and leave the head and shoulders floating in blackness, seems like a very sad fate, to me very unpleasant. I think you should always represent the figure as far as you go, throwing it a little out of focus, a little out of intensity, concentrating on the face; but let there be some legitimate means of stopping the figure—rather the stopping it with a frame—not that cutting off with a black frame (or vignette [*Ed.*]).

"I could go on indefinitely, because our arts are closely related. Very many of these things which I see among your exhibits here appeal to me strongly as a sculptor.

"I feel that the essential thing is the face; everything should be subordinated. I think we are at a disadvantage in photographs, because the details, for instance, of a lady's hat, are so inflexible, so insistent in the photograph. In Nature the head is generally bobbing. We toss the head around and smile. You are looking at the lady and her face, studying her, not the head. In the picture in the exhibit the technical effects shown in the lady's hat are fine from that standpoint. The shadow under the hat is fine; that was evidently the object sought in the representation. It is a beautiful piece of modeling, but, after all, it is the head that cries out for atten-

tion. I am getting a little tired of the puncture of the hat ; the embroidery, etc. It is the hat, not the face. How to avoid the difficulty, I cannot see. But this man is broad and big enough to avoid them if he tries. The impression on me is not that of a portrait of a lady, but of a lady's hat.

"But I would much prefer to dilute this and give it you in individual doses in the other room. I enjoy talking with you before your groups of work. I never go before the best work without discovering beauties, and presently, some faults. I am making delightful discoveries in there.

"The best thing in that place is the evident desire to progress, the fact that you are learning to do things better all the time, setting an example for emulation. I see there, too, something which should make every American proud of his country, the splendid types of people among the lowly—no low-browed peasantry, such as you see in Europe among the men and women with the hoe. But the beautiful women, strong and rugged-faced men, lovely and flower-like children. Those testimonials to American manhood and womanhood which I find there make me grateful to the photographers who have brought them together as so many beautiful examples of their art. I thank you for your attention." (Applause.)

Mr. Schervée: "I would like to introduce at this time for action upon to-morrow an amendment to the Constitution ; I will read the section sought to be amended :

"Article III, Section 1. The officers shall consist of a President, First and Second Vice-President, a Secretary and a Treasurer, who shall hold office one year from the first day of January following their election, or until their successors are elected."

"That is the section as it now reads. The following is the proposed amendment, viz :

"Article III, Section 1. The officers shall consist of a President, First and Second Vice-President, a Secretary and a Treasurer ; the President, First Vice-President, Second Vice-President and Secretary to serve for the term of one year from the first day of January following their election ; the Treasurer to be elected for the term of three years from the first day of January following his election ; all to retain their offices until their successors are elected."

President Guérin : "Mr. Lancaster, I believe you have something to say to the Convention about your State Convention."

REMARKS OF MR. H. LANCASTER, OF NEBRASKA.

"Mr. President, Brother and Sister Photographers: After listening to the beautiful talk from Professor Taft, it would seem like getting back to earth again to talk to you about the work in other States, or work in other Conventions ; but I will speak just for a moment or two to you of the work that we are doing in Nebraska, Nebraska being one of the further Western States.

"I come to you, too, seeking your aid in the way of helping to educate the western people in what you of the East and Middle States would term the standard of perfect photographic work.

"Last year we held a convention in the City of Omaha, which was well attended—there being nearly two hundred present. It is very thorough in its work, and pleasing in the results. We have all felt that we were benefited by the labors that contributed to its success, and by the examples of photographic work shown.

"One of the best of the premiums we gave was carried away by a citizen of this State, the diamond medal having been won by our neighbor, Pirie Macdonald.

"This year we come to you with an offer for the best of your work, and tender to you three very elaborate and handsome silver cups and vases, which we would like to have contested for by all of the eastern photographers. The entrance fee for prize competition is nothing. We will be glad to have all of you send your exhibits to us at Omaha. Our Convention convenes on the 26th of this month ; so there is only just enough time for the work to be packed and shipped to reach us there. I will say, too, that all of the work which is awarded premiums at that time, and which receives forty out of a possible fifty points, will be hung in the salon of photography at the Greater America Exposition, which is now in progress. The Executors' Board have set aside a building for that purpose, and a catalogue will be published containing the names of the exhibitors and classing their work, with their names and residences, and whatever other history they wish connected with it ; so that you will receive quite a large amount of free and splendid advertising. It is such advertising that makes the photographer prominent, and it is the prominent men who make the financial successes, and otherwise, in their respective homes.

"Now, I wish to extend to you a hearty welcome to the West, and I earnestly ask of you your aid in educating all our people. We, in the West, have a standard of work ; you in the East have a standard of work, and we wish to compare those standards. We, most of us, are perhaps at sea as to what is actually the standard of perfection in photography. We have an art side and a photographic side, and it is our desire to learn which of those approach nearest to perfection in our beloved art." (Applause.)

Mr. Pirie Macdonald read the following :

REPORT OF THE COMMITTEE ON DAGUERRE MEMORIAL.

To the Officers and Members of the Photographers' Association of America :

"It in the sense of the Daguerre Memorial Committee, appointed by you, that the following resolution be submitted to the Association for approval :

"*Resolved*, That the science of photography should be represented in the Congressional Library at Washington by a tablet, or a bust of Daguerre ; or in some fitting manner agreeable to the Directors of that institution,

"C. M. HAYES, Chairman, Detroit, Mich.;

"GEORGE STECKEL, Los Angeles, Cal.;

"PIRIE MACDONALD, Albany, N. Y.;

"F. W. GUERIN, St. Louis, Mo.;

"G. MOSES, New Orleans, La.;

"*Committee.*"

Mr. Macdonald : "I move the adoption of the report and resolution."

Motion seconded. Unanimously adopted.

The vote having been taken, as above, a delegate in the rear of the hall asked that the resolution might be again read and explained.

Secretary Sperry : "This committee was appointed to report on the suggestion made by Mr. Hayes in his address, viz.: That whereas, in the Congressional Library at Washington, in which are collected, not only the literary work of all ages, but also tablets to prominent persons in every walk of science and art, there is nothing at present to represent photography. Therefore Mr. Hayes suggested that some means be adopted to induce the authorities of that institution to place in that grand Library a tablet to Daguerre. This committee have made the following report." (The Secretary then again read the report as above given.)

Mr. H. S. Bellsmith : "During the administration of Mr. McMichael a fund was started for the purpose of erecting a bust of Daguerre. I believe such a bust was finally made and given place in the Smithsonian Institute at Washington."

President Guerin : "It has been moved out on the lawn since then.

Mr. Rockwood : "There is now in Washington a statue to Daguerre that was placed there by the Association, as this gentleman has stated, but that is not in the Congressional Library. The Library Building is the grandest thing on earth in the way of architecture ; and there in that mighty building are collected the records of all the great inventors, scholars and artists of the past ages, while Daguerre is omitted. It was the idea of Mr. Hayes that that omission should be in some way supplied."

Mr. Steckel : "I should like to make a motion that a committee be appointed to ascertain, or take steps with such object in view, or to receive contributions, if a tablet can be placed there—I should judge a tablet would be more appropriate, because we already have a bust at Washington—for such a tablet to Daguerre being placed in the Congressional Library, a committee of three, or such number as you see fit."

President Guerin : "I think this resolution covers that."

Mr. Pirie Macdonald : "As I understand, this committee that was appointed here still holds over in power. As to contributions, I think it is not a matter of money, in all probability, so much as a matter of a little lobbying ; it is a matter of calling the attention of the proper officials, or authorities in control of the Congressional Library to the fact that such omission exists, as Mr. Rockwood suggested, a while ago. I do not imagine it is going to be necessary to contribute at all financially. I believe that thing must be handled politically and diplomatically ; and let the United States handle the financial part of it."

Mr. Rockwood : "Before final action is taken by the Committee, I would suggest that the exact initiation of this art be carefully investigated and inquired into ; that is, that the Committee discover whether Daguerre was alone in the matter. It is a matter of record that J. Nicéphore Niepce, the confrère of Daguerre, was the first man to use the camera ; as to who was the originator of the sensitive plate, I think it will be well for us to discriminate before taking final action, and suggest to the Committee to ascertain the exact history in the matter, because it is thoroughly understood now by many scientific people that the discovery, or the invention, of the daguerreotype was a joint production of these two men, Niepce and Daguerre, the same as the honor of its introduction into this country is divided between Morse and Draper, the one being an artist and the other a scientific man. So I offer the committee this suggestion that they look up the exact history bearing on this question, and possibly they may couple those two names together as founders of the art."

Mr. J. A. Tennant : "I would like to say that when they do look up the history they will find that Niepce was the first and Daguerre the second. Daguerre made

the first practical application of the process ; but Niepce was entitled to the credit of first using the sensitive salts and the lens in the camera as a means of producing photographic images. Niepce's application was in 1816, and Daguerre's in 1839, and the names should be coupled together—Niepce first."

Mr. Rockwood : " It does not require any action now on the part of this body ; it is only a suggestion."

The President then announced the entertainment for the visiting delegates, as heretofore stated, in this report, according to the programme of entertainment by the local committee ; also lecture by Professor Griffith at the School of Photography this afternoon, after which the Convention adjourned until 10.30 A. M., Friday, July 21, 1899.

FRIDAY, JULY 21, 1899.

FOURTH DAY—MORNING SESSION.

The Convention met pursuant to adjournment, President Guerin in the Chair.

Mr. Scherree called up the amendment to the Constitution proposed by him on yesterday, and laid over under the rule, and moved the adoption of the same. Carried unanimously.

In putting the question to vote, the Chair explained the only change made by the amendment, viz., extending the term of office of the Treasurer from one to three years.

The President announced as the next order of business selection of meeting place for the next Convention.

Invitations were read by the Secretary embraced in communications from the following, viz.:

T. W. McCreary, Manager Hotel Victory, Put-in-Bay, O.; Gustav Tafel, Mayor, Cincinnati; W. B. Melish, President Cincinnati League; E. P. Wilson, Secretary of same.

The Secretary also read an invitation for the 1901 Convention to be held in Buffalo, N. Y., from C. M. Treat, Secretary Bureau of Conventions, Buffalo, N. Y.

The President noted the invitations received as from Put-in-Bay and Cincinnati, and asked if any further announcements along the same line.

Mr. Pirie Macdonald, of Albany, N. Y., read letters from the following, viz.: T. J. Sullivan, Secretary the Citizens' Business League, Milwaukee; David S. Rose, Mayor, Milwaukee; also Mr. Macdonald read telegrams from the same gentleman, as follows:

" MILWAUKEE, Wis., July 19, 1899.

" S. L. STEIN, Photographers' Association of America Convention,

" Celoron, N. Y.

" DEAR SIR,—We are anxiously awaiting to hear that Milwaukee has been selected by your honorable body for your 1900 Convention. Kindly renew the invitation of the most progressive business organization in Milwaukee, the Citizens' Business League.

" T. J. SULLIVAN, *Secretary.*"

" MILWAUKEE, Wis., July 19, 1899.

" S. L. STEIN, Celoron, *via* Jamestown, N. Y.

" DEAR SIR,—It will be a pleasure to me to welcome and extend the freedom of the city to the members of your honorable body when you gather in Convention in our beautiful city, where you will be entertained royally by our hospitable citizens.

" DAVID S. ROSE, *Mayor.*"

In presenting the claims of Milwaukee, Mr. Macdonald said:

" Ladies and gentlemen: We have enjoyed here for four years a hospitality that you must not expect anywhere else on earth. (Applause.) In all the kindness and goodness and business interest that Milwaukee and Milwaukee's sons can possibly muster, they cannot display a spirit more thoroughly open-handed, fair and generous than we have been treated to in Chautauqua.

"You must remember, however, that it is not we ourselves, we of New York, we of New England, we of Pennsylvania, aye, and we of Ohio, that must pander to our ease and our convenience, and the pleasure that we have in meeting, knowing full well that if we go West many of us will have to stay at home, but you must remember that we have western brothers, people who for years have supported this Association, people who for years have been recognized as the leaders in photographic organizations, and that we for years have kept ourselves to ourselves. We for four years have pandered to the idea that we were enjoying ourselves, and we have neglected to consider the claims of the western people. In order to have a national organization, an organization which is as comprehensive as a national organization should be, we must have with us the western people; and I am very sorry to say, that here to-day we have a smaller representation than we have ever been favored with. It is true that our members are not so frightfully deficient. Our paid membership is not so much behind what it has been, but it is due largely to the fact that we are in a densely populated district. Our loss from a large section of the West in attendance here is something that very few of you, unless you have attended a number of conventions, can fully realize, and I believe it is but justice that we recognize the claims of our western brothers. (Applause.) This is not any threat, because I am heart and soul an Eastern man; but mark you, if you neglect too long the claims of the Western people you will lose them, and we will lose our identity as a National body, and become simply an eastern organization. (Suppressed applause.) That is the one claim of equity and justice that I have to make for moving our Convention once more westward.

"I have as yet not touched upon the claims of Milwaukee as a convention city. In the first place, we have been long indulging the idea that this Celoron is an ideal summer resort, and while we still hold this opinion, we have to recognize the claims of others, and we must acknowledge that it is impossible to find a city more thoroughly adapted to a summer convention than is Milwaukee. (Applause.) Our people from Hotel Victory tell us of the beauties of Hotel Victory. It is impossible to have a spot on a western lake that is not beautiful; but as you go into Milwaukee, I never will forget as long as I live the first time that I went in there. It was on a summer afternoon, and the sun shone on that marvelous blue water, and outlined in the distance that peculiar mellow cream which gives to this the name of the 'Cream City,' that mellow creaminess, all conducing to form a picture that has been fastened on my mind as a harmony of color. In those wind-swept streets, when here the thermometer is 110 degrees in the shade, you have comfort such as you get in no other city that I know of. The citizens of Milwaukee, through their Business League, have arranged that we will have free use for two weeks of a convention hall for which the fee is \$1,000 a week; that is something that must not be neglected in your consideration of this matter. It is not a hall that is made to answer the purpose; it is a hall made for the purpose; it is a hall which contains an art gallery second to none as an exhibition room; and with all the heartiness and cordiality with which this invitation is extended to us by the Mayor, and by the Citizens' Business League, I feel that I am thoroughly justified in nominating—Milwaukee!" (Applause.)

Mr. Brady: "Mr. President, in order to bring the subject properly before our Convention, I move you, sir, that when this Convention adjourns, that we adjourn to meet in 1900 at our present meeting place, Celoron, on Chautauqua."

President Guerin: "Do I hear a second to Milwaukee?"

Mr. Moses: "I second the motion to select Milwaukee."

President Guerin: "The motion is seconded. We will now hear you, Mr. Brady."

Mr. Brady: "I did not understand it as seconded, but since the Chair has acknowledged the second I would amend, that instead of meeting at another place that we choose our present meeting place for 1900."

Mr. Towles: "In view of the courtesy that has been extended by the other cities read by the Secretary, I move that all of the propositions presented to this body be considered, and voted upon, that all may have an equal chance." Seconded.

Mr. Macdonald: "I rise to a point of order. It has been customary in days past to ballot for the location; and I believe this is very unwise to start now to select by acclamation."

President Guerin: "The point is well taken; we intend to ballot."

Mr. Towles: "My only object in making the suggestion I did was simply to give to all cities competing an equal chance."

There being no other applications, the President announced that the ballot would be taken, and called on the Secretary to read the list of cities under consideration.

The Secretary read the following: Milwaukee, Celoron, Put-in-Bay, Cincinnati. Buffalo applies for 1901, which, of course, cannot be considered at this time.

Messrs. Bowersox and Armstrong were appointed tellers, and they proceeded to collect the ballots.

Mr. Brady inquired if it was in order to speak on the subject while ballots were being collected, and was informed in the negative by the Chair.

The ballots having been collected and counted by the tellers, the result was reported to the Secretary, who made the announcement: Total number of votes cast, 233; of which Milwaukee having received a majority of all votes cast, was declared the selection of the Convention for meeting place in 1900. (Applause.)

On motion, the Secretary was directed to telegraph to the Mayor of Milwaukee the glorious news for Milwaukee.

On motion, the vote was made unanimous.

The Chair announced as next in order, election of officers.

Mr. Schervee: "I would like to make a motion that our Secretary be instructed to send a vote of thanks to all those from whom this Association has received such kind invitations to convene in the respective cities, and the cordial appreciation by us of their kindness and courtesy."

Unanimously adopted.

By direction of the President, the Secretary read the following:

REPORT OF COMMITTEE ON NOMINATIONS.

"CELORON, N. Y., July 21, 1899.

"*To Photographers' Association of America:*

"Your committee on nominations would respectfully report as follows:

"For President, S. L. STEIN, Milwaukee.

"For First Vice-President, W. H. PARTRIDGE, Boston, Mass.

"For Second Vice-President, GEO. EDMONDSON, Cleveland, O.

"For Secretary, E. E. SEAVY, New Castle, Pa.

"For Treasurer, F. R. BARROWS, Fort Wayne, Ind.

"Respectfully submitted,

"C. M. HAYES, *Chairman*.

"J. B. SCHRIEVER,

"GEO. G. HOLLOWAY.

"WILL H. MOSES.

"WILLIAM A. WEBSTER.

"PIRIE MACDONALD, *Secretary*."

A motion was made that all the officers nominated be elected by joint ballots to be cast by the Secretary. Ruled out of order because unconstitutional.

On motion, nominations for President closed.

On motion of Mr. Pirie Macdonald, the Secretary was directed and instructed to cast the ballot of the Association in favor of the election of S. L. Stein for President of this Association, for the year commencing January 1, 1900. Adopted.

The President announced as next in order election of First Vice-President, and asked if any other nomination than that presented by the Nominating Committee.

Mr. Kellmer nominated Mr. George B. Sperry. Seconded.

On the motion nominations closed, and the vote being cast and collected, resulted in the election of Mr. George B. Sperry, by a large majority, the result being announced by Mr. Barrows.

On motion of Mr. Towles, the vote for Mr. Sperry was made unanimous.

Mr. Schneider: "You can't down a man from Ohio!" (Cries of "Speech!" "Speech!")

Mr. George B. Sperry: "Mr. President, Ladies and Gentlemen: Love of approbation is said to be a weakness of human nature. If that be so, I have a very large amount of that weakness; for this very generous vote that I have received touches the spot that goes clear to my heart. I shall always remember it. I thank you very much for it, and hope I appreciate the responsibilities involved. I certainly shall try to meet them. I thank you." (Applause.)

President Guerin announced, as next in order, the election of Second Vice-President, and stated that the regular nominee was Mr. George Edmondson, of Cleveland, O.

Mr. George Varney was nominated, but referred to his past service of three years, and suggested that there were other worthy gentlemen who might serve. He withdrew his name, thanking the Association for their kindness.

The following additional nominations were made: L. Smith, Saginaw, Mich.; J. E. Giffin, Wheeling, West Virginia; George Nussbaumer, Buffalo, N. Y.

Mr. Nussbaumer was about to put in a disclaimer, but was stopped by the Chair, who insisted there ought to be a Van Dyke representative in the Executive.

On motion, nominations closed.

The vote resulted in no election, and, according to custom, the lowest candidate was dropped. A second vote being taken, resulted in the election of Mr. Edmondson.

On motion, the election was made unanimous.

The Chair announced in order the election of Secretary, Mr. E. E. Seavy being the regular nominee.

Mr. Schervée: "We have among us a very popular man, as has been shown by the vote between Mr. Edmondson and our Van Dyke, Mr. Nussbaumer. I should like to present to you the name of this man, who has been with us for years. He has worked hard for the Association, and he will make a noble representative to our Convention out in Milwaukee. I therefore place in nomination the name of Mr. George Nussbaumer for Secretary of our Association in 1900."

On motion, nominations closed.

The vote resulted: Seavy, 52; Nussbaumer, 53; Barron, 1, there being thus no election if the vote for Barron should be counted. The situation being stated by the Chair, on motion, the vote cast for Barron was declared illegal, nominations having been closed, and no other names than those of Nussbaumer and Seavy presented. The vote for Barron was, by motion, thrown out, and this gave Mr. Nussbaumer the majority, and he was declared duly elected.

The Chair announced as next in order the election of Treasurer, and stated that Mr. F. R. Barrows, of Fort Wayne, Ind., was the regular nominee.

Mr. Reeves: "Mr. President, I believe that a motion is in order, at the present time, in order to facilitate business, to elect by acclamation. I want to offer such a motion, and will preface it by a few remarks. We have as the regular nominee a man of sterling integrity, a man who has worked hard for the success of this Association, a man who has been very efficient in building up the Indiana Association to what it is at the present day, something we are very proud of; a man whom you could not do better than elect, although you have plenty of good material; therefore I move the nominations be closed, and Mr. F. R. Barrows be made the Treasurer of this Association."

There being no objection, nominations closed, and on motion of Mr. Varney, a *viva voce* vote was directed to be taken.

On further motion of Mr. Bowersox, the Secretary was directed to cast the ballot of the Convention for the election of Mr. Barrows as Treasurer. Unanimously adopted. (Cries of "Speech!" "Speech!")

Mr. Barrows: "Mr. President, Ladies and Gentlemen, and my Friends: This has come to me through friends as representing the Association, an unsought-for office. I am pleased beyond measure to know that, notwithstanding the recent changes made in your constitution, extending the term of your Treasurer to three years instead of one, that you have still reposed this charge in my hands, feeling that I would carry it out safely. I promise you that in the discharge of my duty nothing shall come up except in the interest of each one alike. I promise to turn your funds back to you as I receive them, dollar for dollar. I thank you." (Applause.)

(A voice: "What's the matter with Indiana? He's all right!") (Cries for "Stein! Stein!")

Mr. Stein: "Next year you will hear all you want of me. Now comes the award of prizes. I hope you gentlemen on the outside of the enclosure will all step in."

President Guerin: "Come in, you men who expect gold medals! I see you are all moving in now."

Awards were read by First Vice-President Stein as follows:

AWARDS.

EASTERN DIVISION.

- Class A.*—First, No. 35—Chas. V. Schwab, Bradford, Pa.
 Second, No. 52—J. W. Kellmer, Hazelton, Pa.
 Third, No. 108—A. G. McMichael, Detroit, Mich.
- Class B.*—First, No. 42—Don C. Scott, Friendship, N. Y.
 Second, No. 51—Elias Goldensky, Philadelphia, Pa.
 Third, No. 131—E. F. Gray, Watertown, N. Y.
- Class C.*—First prize—S. Sharpsteen, Grand Rapids, Mich., No. 145.
 Rating for the following, viz:
 No. 44—S. H. Lifshy, Brooklyn, N. Y.
 No. 97—P. R. Young, Oneonta, N. Y.
 No. 110—A. McFarland, Elmira, N. Y.
 No. 10—Rogers Newing, Binghamton, N. Y.
 No. 32—Wm. H. Towles, Cumberland, Md.
 No. 21—Van B. Wheaton, Amsterdam, N. Y.
 No. 53—W. W. Cowles, Seneca Falls, N. Y.
 No. 118—John W. Acker, Hornellsville, N. Y.
 No. 8—H. T. Black, Jamestown, N. Y.
 No. 141—W. J. Cairns, Newark, N. J.
 No. 130—John H. Kemp, Scranton, Pa.

SOUTHERN DIVISION.

- Class A.*—First, No. 93—Moore & Stephenson, Atlanta, Ga.
 Second, No. 11—J. E. Giffin, Wheeling, W. Va.
 Third, No. 17—A. H. Hitchler, Houston, Tex.
- Class B.*—Silver medal, No. 47—W. J. Chambers, Montgomery, Ala. (No competition).
- Class C.*—First, No. 119—W. G. & A. J. Thuss, Nashville, Tenn.
 Second, No. 75—W. H. Erskine, Huntington, W. Va.
 Special bronze medals, No. 73—E. B. Peddinghaus, Birmingham, Ala.
 No. 23—G. Moses & Son, New Orleans, La.

WESTERN DIVISION.

- Class A.*—No competition.
- Class B.*—First, No. 74—A. L. Jackson, Tacoma, Wash.
 Second, No. 38—Struck Aune, Portland, Ore.
- Class C.*—First, No. 43—J. A. Brush, Minneapolis, Minn.
 Second, No. 139—H. Lancaster, Omaha, Neb.
 Third, No. 124—P. H. Bauer, Leavenworth, Kans.
- Special Awards.*
 No. 14—F. W. Vorhees, Albuquerque, N. M.
 No. 30—Frank W. Medlar, Spencer, Iowa.
 No. 96—Chas. Nast, Denver, Colo.
- Miniature Class.*
 First, No. 62—Pirie Macdonald, Albany, N. Y.
 Second, No. 58—James Arthur, Detroit, Mich.
 Third, No. 19—Edmondson & Decker, Cleveland, O.
 Special award, No. 31—D. Rosser, Pittsburgh, Pa.
- Commercial Class.*
 First, silver, No. 64—John Betts, Jr., Baltimore, Md.
 Second, bronze, No. 112—J. B. Schreiber, Emporium, Pa.
- Landscape Class.*
 First, silver, No. 16—L. V. Kupper, Edinboro, Pa.
 Second, bronze, No. 28—Geo. E. Tingley, Mystic, Conn.
 Third, diploma, No. 64—Robert Wilkinson, Montpelier, Vt.
- Marine Class.*
 First, silver, Allan Fanjoy, Sault Ste. Marie, Mich.
- Group Class.*
 First, silver, No. 125—P. H. Bauer, Leavenworth, Kans.

Flashlight Pictures.

By Geo. Lawrence, of Chicago; special award of silver medal, and the hearty thanks and congratulations of the Committee of Award.

Interior Class.

First, silver, No. 7—Wm. Koehne, Chicago, Ill.

Second, bronze, No. 138—H. Lancaster, Omaha, Neb.

Third, diploma, No. 94—Beckman Bros., Saginaw, Mich.

Foreign Class.

Your Committee did not feel that the quality of the exhibits merited a reward.

Grand Portrait Class.

First, No. 61—Pirie Macdonald, Albany, N. Y.

Second, No. 41—Dudley Hoyt, Rochester, N. Y.

Third, No. 56—Jas. Arthur, Detroit, Mich.

Fourth, No. 18—Decker & Edmondson, Cleveland, O.

To the latter two your Committee recommend diplomas.

Grand Genre Class.

First, No. 122—Geo. H. Van Norman, Springfield, Mass.

Second, No. 57—James Arthur, Detroit, Mich.

Complimentary Class.

In the Complimentary Division are two examples of photography which call for a special award. They are entitled "The Evening of Life," by Van Norman, of Springfield; and "Portrait of a Man," by Schreiber, of West Bend, Wis.

With this concludes the somewhat arduous, but nevertheless agreeable task of your Committee.

Respectfully submitted,

GEORGE G. ROCKWOOD,

C. M. HAYES,

I. BENJAMIN,

Committee.

Mr. Stein: "I think, in recognition of such a beautiful trophy, Mr. Pirie Macdonald ought to give us a few words." (Applause.)

Mr. Macdonald: "Gentlemen, boys and girls: I have had the fortune to meet your smiles for the third time in the grand prize class. When I was a youngster it seemed to me as though if a man was capable of getting a prize medal that his heart ought to overflow. When I went to St. Louis in 1890 somehow or other I was awarded the Cramer grand prize and a couple of gold medals, and it seemed as though I had much more than belonged to me, as I said then; and one thing that overwhelms me is the fact that when a man has done something for which he has been awarded a prize—when he has done something that has seemed to merit the approbation of his fellows in the profession—that it is incumbent upon him forever after to keep that standard up, and it seems to me that is an absolute impossibility. Again I was awarded a grand prize, and last year once more, and each time the thought has not gladdened me, but rather saddened me with the idea that it was impossible for me to keep up the strain. You have been so uniformly kind, you have been so good in the recognition of everything that might be any way laudable, and you have overlooked with all manner of kindness my mistakes, I feel that, perhaps, it is possible, even yet, that if I do by any error disappoint you—if I do somehow or other meet with your disapproval—that you may merely remember that I have thought and that I have worked to get your approval as the one thing that has been dearest to me, and I think that those people that know me personally know it most that my effort has been that I might have your sanction; and I have sacrificed money, I have sacrificed everything for your approval; and I want you, all of you, to feel that I appreciate it now that you have given it for the third time. I want you to feel that, while possibly—probably—I shall never compete again, that I am more to-day apart of you than I ever have been before, that I love you more dearly than I have ever loved you before, that I will work for you certainly harder than ever I worked before. Gentlemen, aye, let me call you 'boys,' I thank you every one." (Applause.)

Mr. Van Norman was called for and came forward.

Mr. Van Norman: "Friends, I am a poor speaker. I cannot talk to you as Mr. Macdonald. I never could make a speech, and so I don't know what to say. I feel that I am honored above my abilities. I feel very, very humble; I feel that while I have worked hard, worked as hard as I know how, to make deserving work, which would meet the approval of my friends in the profession, I feel that the results have been beyond my expectations. I cannot help but think that. I have been more than pleased, more than delighted, at the kind expressions of good-will and approval of my work, and I thank you most heartily." (Applause.)

On motion, adjourned until 10.30 A. M., July 22, 1899.

SATURDAY, JULY 22, 1899.

FIFTH DAY—MORNING SESSION.

The Convention met pursuant to adjournment, and was called to order at 11.30 A. M. by President Guerin.

The following resolutions were presented by Mr. Pirie Macdonald, viz.:

"Whereas, The entertainment furnished by the manufacturers and dealers has been a most enjoyable feature of the Convention; therefore be it

"Resolved, That the Photographers' Association of America in Convention assembled extend their sincere thanks."

Seconded by Mr. Schervée, and unanimously adopted.

Also,

"Whereas, The courtesy extended by the press of Jamestown is appreciated; therefore be it

"Resolved, That the Photographers' Association of America in Convention assembled extend their sincere thanks."

Unanimously adopted.

Also the following:

"Whereas, The manifest interest and generosity of the citizens of Jamestown has been a notable and pleasing feature of our meeting here; therefore be it

"Resolved, That the Photographers' Association of America in Convention assembled extend their sincere thanks."

Seconded by Mr. John Betz, Jr., of Baltimore, and unanimously adopted.

Also the following:

"Whereas, The School of Photography maintained by the American Aristo Company has been most instructive and profitable to the membership of the Association; therefore, be it

"Resolved, That the Photographers' Association of America, in convention assembled, extend their sincere thanks."

Seconded by Mr. I. Benjamin, of Cincinnati, and unanimously adopted.

TESTIMONIAL TO MR. CHARLES S. ABBOTT.

Mr. Pirie Macdonald: "Mr. President and Gentlemen of the Association—In this our National Association I recognize the fact that we have amongst our membership many most brilliant men. I recognize also the fact that you are all capable of feeling precisely and absolutely what I feel at this moment. I recognize that it is not through any neglect on your part, but that it is intended as an especial and particular honor that I have been selected to bring before your notice and attention a fact which is most thoroughly and absolutely appreciated by you all, namely, the conduct of a man who has been a friend to us individually and collectively as an association for a great many years; a man who for the past four years has worked absolutely beyond any possibility of criticism to your good, for your interest, and with a generosity most unprecedented in the annals of this or any other association.

"We have been here four years, and our personal comfort and our financial welfare have been looked after, have been directed, by one man more especially and particularly than by any one else.

"He has represented a concern in its business interests, but he has done it in such a way as to place his efforts entirely above any selfish considerations in his numberless attentions to our comfort and convenience.

"Gentlemen, I think that you all feel with me that our friend, Mr. Charles S. Abbott (applause) is entitled to our recognition in no uncertain way. I believe that you all feel with me that we would be indeed ungrateful were we to go away from this beautiful spot, this spot from which all the stones have been removed by Mr. Abbott, without expressing in some fitting manner our sincere sense of obligation to him.

"Mr. President, I move you, sir, that a committee be appointed, with power to purchase in the name of the Association, a suitable token to be presented to Mr. Charles S. Abbott." (Applause.)

Motion seconded by Mr. Schervée, and unanimously adopted.

Mr. Macdonald: "Gentlemen, when the nays were called for by our worthy President, the fact of your absolute silence emphasized your vote; and I want to tell you that the fact that this motion was carried without a dissenting voice makes me feel as though I loved you better, because truly you would not be men had you raised a finger in opposition." (Applause.)

President Guerin: "How shall the Committee be appointed?"

Mr. Macdonald: "By the Chair."

The Chair named as such Committee the following: Messrs. Pirie Macdonald, Albany, Chairman; C. M. Hayes, Detroit, and Will Kellmer, of Hazelton, Pa.

Mr. Macdonald: "I have been continuously, as you all know, in attendance at conventions for the last ten years; and I know there are certain little tag-ends that have to be gathered up. Not, however, to be classed in this category is the motion I shall now present, and which has not been forgotten, viz.: Inasmuch as we have had a Board of Officers this past year who have worked against a sentiment that we had been here perhaps too long, and who beyond question have made a most glorious success of this our fourth Convention at Chautauqua, I believe that they are deserving of a vote of our heartiest thanks. Therefore, I move you, Mr. President, that this Association tender to the officers of the past year a hearty vote of thanks for their efficient services."

The motion was put to vote by Mr. Macdonald, and unanimously adopted.

President Guerin: "In behalf of the officers and myself I thank you, gentlemen, for the kind endorsement we have received. While I don't claim to have done so much, the balance of the officers have to my knowledge served you faithfully, and I think they deserve the recognition you have given them for the success of this Convention. (Applause.) (A voice: 'You are too modest!') If there is no other business, a motion to adjourn will be in order.

Mr. Stein, of Milwaukee: "Before we adjourn, gentlemen, I would like to say that I hope to see every one of you in Milwaukee, and we will give you a really good time. (Louder.) There is one thing I want to tell you; those that make exhibits may prepare them for daylight exhibition. We have a beautiful art gallery there, where the pictures will be displayed. You will not need to bring backgrounds. You will have pure daylight, with a maroon background. The rooms will be a sort of a triangular arrangement. In five minutes you can go right through it, not one continuous stretch which tires one out. It is a large room, with three adjoining rooms communicating, with splendid daylight coming from above, a splendid canopy there, which just floods the light right where it is wanted, and nowhere else. You will not have to bring glass. I have noticed that some of the little miniatures here have been stolen. You will not have to encounter that difficulty, because you can frame them right up and put your glass over them, and they will be safe."

Mr. Schervée: "Before we adjourn, let us give a hearty three cheers and a tiger for the Nineteenth Convention, and in the hope that we may all meet again next year, when we go to Milwaukee. (A voice: 'And for Chautauqua!') And for also the press, the officers and the citizens of Jamestown! (A voice: 'And that clambake!!') Yes, we will never forget the clambake!"

With a rousing three cheers and a tiger, the Convention of 1899 passed into history.

Adjourned.

TREASURER'S REPORT FOR 1899.

Cash on hand January 1, 1898.....	\$1,910 40	
Dues 1898.....	844 00	
New members.....	435 00	
Rent of space.....	1,131 00	
Rent of desks.....	175 00	
Collection on back space.....	121 00	
Rent of furniture....	21 15	
	<hr/>	\$4 637 55
Expenditures.	\$3,539 35	
Cash on hand January 1, 1899.....	1,098 20	
	<hr/>	\$4,637 55

SECRETARY'S REPORT.

Received for space.....	\$1,131 00	
Received for desks.....	175 00	
Rent of furniture.....	21 15	
	<hr/>	\$1,327 15
Turned over to the Treasurer	<hr/>	\$1,327 15

Audited and accepted January 9, 1899.

(Signed) F. R. BARROWS,
S. L. STEIN.

(Communication.)

" ATLANTA, GA., July 17, 1899.

" F. W. GUERIN,

" *President Photographers' Association of America,*

" Celoron, N. Y.

" MY DEAR SIR,—I regret I cannot be with you on this occasion. Though retired from business, I still feel the same interest in the advancement of our beautiful Art, to which I have devoted forty-two years of my life, and the continued success of the Association of which I have been a member since its birth. I will continue my membership, and hope to meet with you many times in the future.

" Believing that you will have a pleasant and profitable meeting, I am,

" Fraternally yours,

" (Signed) C. M. NOTES."

This matter was received too late for insertion in the body of the report and is appended thereto as the BULLETIN goes to press.—[EDITORS.]

EXHIBITS.

FOLLOWING the custom established three years ago the dealers' exhibits were located in the Convention Hall around the space reserved for the audience during the meetings of the Convention. Those represented this year were M. A. Seed Dry Plate Company, located immediately at the right of the entrance to the hall, beyond whom were The Standard Dry Plate Company, The Chicago Chemical Works, The Hammer Dry Plate Company, The A. M. Collins Manufacturing Company, Lovell plates, and E. & H. T. Anthony & Company, all of whom occupied a greater or less amount of space, separated from the hall by railings and decorated to a greater or less degree. At the left of the entrance were The H. Lieber Company, a room devoted to the demonstration of Velox paper, Carl Ernst & Company, The Robert Keller Ink Company, E. A. Gilbert, and Inglis' Bromide Enlargements, while the center of the hall immediately facing the entrance was occupied by The Cramer Dry Plate Works, The Nepera Chemical Company, L. W. Seavey, W. P. Buchanan, S. Franklin and Rough & Caldwell, while the following dealers were represented by desks on the floor of the hall. On the right of the hall Scovill & Adams, Illinois College of Photography, Worcester Envelope Company, Morrison Photo Supply and Manufacturing Company, London Chemical Manufacturing Company, Butts & Adams, Peter Diller, J. H. Smith & Co., Al-Vista Panoramic Camera, The J. Sussman Photo Stock Company, and at the left arranged about the hall, The Professional Photographer, Horgan, Roby & Company, Gubelman Photo-Gravure Company, Globe Scenic Company, Cheney-Hood Company, Reflex Camera Company, New York Dry Plate Company, New Jersey Aristotype Company, Cummins Photo Stock Company and E. T. Foley. The display of photographic apparatus was confined entirely to the house of our publishers, E. & H. T. Anthony & Company, whose exhibit was one of the largest in the building. The A. M. Collins Manufacturing Company and Carl Ernst made extensive displays of card stock and the leading dry plate houses, as noted above, were well represented by their principals, Messrs. Cramer, Hammer and Lovell, all being in evidence, well backed by their traveling men. The exhibit of backgrounds was very extensive, Messrs. Rough

& Caldwell, of this city, being most prominently in evidence, with a large variety of grounds and accessories. Both members of the firm were present, and judging from appearances, will be well represented over the country during the coming year. W. P. Buchanan's exhibit also attracted a great deal of attention, and was the center of an admiring crowd many times during the week.



THE PHOTOGRAPHERS' ASSOCIATION OF OHIO.

ON August 30th, 31st, and September 1st, the Photographers' Association of Ohio will hold its ninth annual Convention at Hotel Victory, Put-in-Bay Island, Ohio.

We have prepared the most interesting and instructive programme ever presented to a convention of photographers. Two eminent artists will lecture and be in attendance constantly to give individual instruction and criticisms.

There will be no public criticisms of pictures, as at former conventions. Instead, Mr. Otto Walter Beck and Wm. J. Edmondson, artists of note, will give private criticisms among the exhibits during the three days of the Convention.

The salon will be more interesting than ever. Pictures retained by the salon will be framed at expense of the association in the future.

The pictures retained from previous exhibitions have been suitably framed.

The most interesting features on the programme are: Lecture by Otto Walter Beck. Subject, "Art Composition Useful in Photography." Lecture on "Color Photography," by Henry M. Ladd, D. D., illustrated by stereopticon.

Practical demonstrations of photography in color by G. W. Edmondson, demonstrations by the American Aristotype Company, Willis & Clements, platinum, Velox, etc.

The question box will be opened and contents discussed at every meeting. The hotel orchestra has been placed at the disposal of the Entertainment Committee, and they promise us a good time.

Committees from the Indiana and Michigan Associations will hold meetings with us to discuss the question of forming a tri-State association.

There will be a large manufacturers' exhibit, and the photographic exhibit promises to excel that of previous conventions.

There is no more beautiful spot for a convention than Hotel Victory. It is just the place to bring one's family and spend the vacation. A special rate of \$2 per day has been secured. There are other places on the island where good board can be had at \$1 and \$1.50 per day.

We extend a cordial invitation to all photographic friends in other States to meet with us.

Fraternally yours,

GEORGE M. EDMONDSON,

President.

THE ASSOCIATED PHOTOGRAPHERS OF MANITOBA AND THE NORTHWEST TERRITORIES.

THE first annual meeting of the Associated Photographers of Manitoba and the Northwest Territories was held in the Council Chamber, City Hall, Winnipeg, Thursday, July 13th.

The meeting was called to order by the President, J. F. Mitchell, of Winnipeg, with a few fitting remarks.

The officers for the ensuing year are as follows: President, I. Bennetto, Winnipeg; First Vice-President, J. F. Rowe, Portage la Prairie; Second Vice-President, C. R. Lundy, Carman, Man.; Treasurer, Mrs. R. E. Carr, Winnipeg, Man.; Secretary, F. W. Parkin, Winnipeg, Man.

The Association opposed the giving of prizes, believing it to be for the better advancement of the profession to discourage the strife for prizes, but to work for the improvement of the profession at large. The Secretary was instructed to write the manager of the Winnipeg Industrial Exhibition asking, to do away with the awarding of prizes for photographs made and exhibited by professional photographers, and to allow the Associated Photographers of Manitoba and the Northwest space for their exhibits.

Several new members were admitted to the Association, and Winnipeg was the choice for the next annual meeting.

GLEANINGS FROM GERMANY-

TRANSLATED BY HENRY DIETRICH.

E. VALENTA Writes about "Panak" and "Birassol."—The analysis of the preparation "Panak" gave as result silver, iron, ammonia, nitric acid, sulphuric acid and organic acids. The "Birassol" is of a similar composition. We have here, therefore, argentic iron solutions, which are spread on paper, etc. After drying, print under a negative, fix in a solution of 100 cubic centimeters of water, 3 to 5 grams fixing soda, 1 to 3 grams sulphite of soda, and finally wash the prints. The resulting picture is of a brown color. A similarly acting preparation is the following:

SOLUTION I.

Green citrate of iron and ammonia.....	2.5 grams.
Water.....	25 cubic centimeters.

SOLUTION II.

Nitrate of silver.....	3.5 grams.
Water.....	15 to 20 cubic centimeters.

To Solution II add ammonia until the precipitate which formed at first has dissolved again. The excess of ammonia in this solution is neutralized by addition of a few drops of diluted sulphuric acid, so that the solution will be still of alkalic reaction, but see that the odor of ammonia is removed. After this, solutions I and II are mixed, and the preparation of the paper can now be proceeded with.

PORTRAITURE.*

BY WILLIAM CROOKE.

(Concluded.)

THIS is supposed by many to be the true relationship of photography to art so far as portraiture is concerned, and so we must be content to worship afar off, and if we cannot evoke souls it is still permitted to us to exercise the little mind we may have at our disposal towards the consideration of the other portions which go towards making a complete picture, and will therefore now consider the background.

With regard to this subject, as showing the importance of the background with relation to the figure, Rubens is reported to have said to the person who recommended to him his son as a pupil sufficiently advanced to be competent to paint his backgrounds, "If he can do that, my friend, he stands in no need of my instruction."

The late Mr. Gleeson White, while editor of the *Studio* magazine, wrote an article, which appeared some time ago in the *Photogram*, taking as his subject "The Use of Dark Backgrounds in Photography," and I am proud to say he honored me by selecting some of my studio work to illustrate his ideas.

But, to return to the practical view taken by the majority of our portrait workers of this all-important subject, it would seem that it is the one point which receives the least attention of any, and I feel sure that if it were to receive the careful study due to it that portraiture would advance by leaps and bounds, and we should no more have our eyes offended by the incongruous productions which meet our view in the various shop windows.

A young English photographer waited upon me in my studio some time ago, and apologized for troubling me, trusting I should have no objection to him taking a look round. In the course of conversation, I asked him if he had any specimens of his work with him, whereupon he produced a packet of cabinet portraits for my inspection. The weak points in them were immediately apparent, all the pictures being taken with a background of an equal gray tint, against which all the ugly lines of the figure were shown up to perfection. I returned his packet of photographs in discreet silence, but, in answer to his earnest solicitation for my opinion on them, I conducted him to my front window, and pointed to a building at the foot of the mound, where he could spend an hour with advantage, recommending him at the same time not to trouble as to the light or treatment of the heads, but simply to study the manner in which the figures rested against the backgrounds. I had not the pleasure of another visit from that gentleman, but I heard indirectly of his safe arrival home with his ardor slightly damped. Velasquez, Vandyke, Reynolds and Raeburn afford the intelligent student ample opportunity of studying what is most desirable to achieve; at the same time, I regret to say that we labor at an art which has its limits.

From a photographic point of view, difficulties often present themselves which seem well-nigh insurmountable, for figures often require adjustment to a certain background, which we have neither the power or time at our disposal to paint according to our idea, and the effect which we have in view must, therefore, be accomplished in some other way. This may be done by placing our background at different angles to the light, and shading certain portions of the figures. For example, if the outline on the shadow side of the head will not bear emphasis, the tone of the background at that particular part must be equal in depth to the shadow, so that the two blend. This leading principle applies to the whole marginal line of the figure, and it thus follows that we must have a clear conception of which points in a subject to emphasize and which to subdue. This also accounts for the reason why so many eminent portrait painters finish the heads of their models before proceeding with the background, or even deciding on the ultimate arrangement for the pose of the figure, so that in commercial portraiture it is almost impracticable to secure always an absolutely harmonious effect.

* Read before the Edinburgh Photographic Society.

The attire of the subject is one of the most important items when considering the background.

If the drapery is graceful and becoming, it will bear greater boldness of treatment, and may with advantage be allowed a place in the picture second to the head.

But one of the photographer's most serious barriers in the way of artistic effect is the constant contending with ugly fashions, the sleeve not infrequently proving a most troublesome point, its shape and size influencing in a larger degree the scale of the head. The large full sleeve, which I regret to say has just become a thing of the past, was, in my opinion, admirably adapted for the square bust portrait, although it certainly had the disadvantage of emphasizing the defects in short, stout figures when full-length pictures were required. The present style of sleeve calls for special treatment, and only in exceptional cases is becoming. The arm usually emerges from a tuft of satin, or other stiff material, about the size of a breakfast roll, and in bust portraits the short piece of arm which appears between the fullness of the sleeve and the lower margin of the picture seldom looks well.

But these and other vagaries of fashion are good tests for the photographer's powers of composition.

Children make delightful pictures, their simplicity and serene unconsciousness being qualities which lend themselves readily to the painter's brush or the less pretentious camera ; but to do them justice in either painting or photography needs a special study and love of infantile life. Reynolds was a great lover of children, otherwise our eyes could never have feasted on such art-treasures as Lady Smith and her children and many others.

His child models were, however, invariably well dressed, and here again, as in adults, the photographer is met with a blank wall of opposition. A new stiff or starched dress is a garment usually brought into requisition for the important occasion, when an old, soiled, or flimsy frock would, doubtless, have been the very thing, could the unhappy photographer have made his own selection. In the case of very young children, the neck and shoulders should always appear, although there is a danger of making the head abnormally large, unless discrimination is used in allowing the dress to fall below the shoulders, thereby giving the appearance of greater width.

If the usual short frock is used, nothing is prettier for a child than a full-length figure standing alone, especially if taken from a low elevation, which gives the little subject dignity, and shows to advantage the limbs, which are always interesting; but this is doubtless the most difficult portrait to secure with any amount of success. The charm of our daily work with children is the constant anticipation of what may next reveal itself.

I will conclude with a few words as to the practice of retouching. As in landscape work, so in portraiture, we get too much detail ; but while not for one moment losing sight of the fact that all the predominant darks in the face are conducive to likeness, yet the excessive details which make their appearance on the intervening spaces can bear modification, as such detail is only troublesome for the eye and not of service as regards the likeness, but when the retoucher directs his energies to the wholesale removal of the darks, then the likeness at once begins to suffer. You remember my reference to seat of sweetness in the female eye, and if the fulness under it is removed, with it goes all the poetry.

All copy for September issue must be in our hands not later than August 18th.

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PHOTOGRAPHED AND COPYRIGHTED, 1899, BY GEO. E. TINGLEY.

SPRING PLOUGHING IN NEW ENGLAND.

A CONVENTION PRIZE-WINNER.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D. LL.D.
W. J. SCAYDLIN.

VOL. XXX

SEPTEMBER, 1899

THE OLD MASTERS: THEIR PRODUCTIONS AND OUR REPRODUCTIONS.

SO much has been said and written during the last few years with reference to the study of the old masters and the value of their work as models for the photographer to copy in his art business and the result of this movement has become so widespread and palpably apparent, that a careful survey of the situation seems to be in order.

As Professor Grubb said before the School of Photography at the recent Convention, "The problem has swung too far in the other direction," and the result was very noticeable in the general tendency to over-strength of shadow and too chalky and blackish tones in the lights in many of the prints exhibited.

We believe, however, that ANTHONY is a vigorous counteracting influence existing to-day, and that it is largely responsible for a movement standing, having its beginning in the fact that those who have so strongly urged open air study and working with the old masters were themselves with the original paintings to which they spoke and had the original pictures in mind when referring to the subject, while we wish our order books and sales were confined to confine our studies to reproductions of a group of low standard of merit, to the extent of possible. That this is the case will regard to much of the work shown at the last Conventions may be more clearly realized by comparing it with any of the current reproductions of the old masters, the similarity to which will be found to be very striking.

This similarity was brought home to me, one evening, while viewing the beautiful slides sent me by Mr. F. J. Smith, and the very able lecture before the photographic Association made at the Convention week, and the wide difference in tone and quality between



PLUGHING IN NEW ENGLAND. 1893. PHOTOGRAPHED BY H. O. F. TINGLEY

PLUGHING IN NEW ENGLAND.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

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THE OLD MASTERS: THEIR PRODUCTIONS AND OUR REPRODUCTIONS.

SO much has been said and written during the last few years with reference to the study of the old masters and the value of their work as models for the photographer to copy in his art business, and the result of this agitation has become so widespread and painfully apparent, that a careful analysis of the situation seems to be in order.

As Professor Griffith said before the School of Photography at the recent Convention, "The pendulum has swung too far in the other direction," and the result was very noticeable in the general tendency to over strength of shadows and the chalky and blotchy effect of high lights in many of the prints exhibited.

We believe, however, that all this is a logical outcome of the conditions existing to-day, and that it is largely traceable to a misunderstanding, having its beginning in the fact that those who have so strongly urged upon us the necessity of studying and working after the old masters were familiar with the original paintings of which they spoke and had the *originals* constantly in mind when referring to the subject, while we who sat under their guidance were obliged to confine our studies to reproductions of a more or less indifferent standard of merit, in the best of instances. That this is the case with regard to much of the work shown at the late Conventions may be more clearly realized by comparing it with any of the current reproductions of the old masters, the resemblance to which will be found to be very striking.

This similarity was strongly impressed upon the writer's mind in viewing the beautiful slides used by Professor Taft to illustrate his very able lecture before the Photographers' Association early in the Convention week, and the wide difference in tone and quality between

a picture painted in colors and the *very best* photographic reproduction of the same picture made itself most keenly felt.

When we stop for a moment to think, the reason for this wide difference is clearly to be seen. The painting embodies, not only black and white (perhaps), but all the subtle flesh tones, lighted and made alive by the skillful use of delicate colors, which, in the photographic reproduction may appear almost, or, perhaps, wholly, black.

How is it possible to gain from such a print any conception of the original from which it was made? We all know that yellows, pinks and light reds will photograph much more like a black than will even a dark blue, for instance, and that a green will be more nearly white or black in proportion to the preponderance of blue or yellow in its composition and the color property of either. Of course, orthochromatic photography has done much to reduce the error, but it has simply been reduced and not by any means removed, and, until some means are found by which color values may be more closely held than now, it will be wholly unsafe to follow a reproduction of a Rembrandt, Hals or Vandyke and obtain a result in any way approaching the original in its essential points of treatment. It is true that long familiarity with reproduction processes and an intimate acquaintance with the work of the best artists of the old and newer schools will enable a photographer to mentally analyze a photograph of a painting and come to a very close approximation of the colors used in the original by which light and shade are expressed, but not so with the average portrait photographer, who, undertaking a study of this kind, relies upon his text-book to convey to his eye by the medium of printer's ink in one color, the drawing, modeling, light and shade, and all that goes to make the original true to life. And all this is expected of a process which is at the beginning defective in that it fails to preserve the relative value of the different colors.

If, therefore, our lecturers and teachers would keep this phase of the subject more prominently in mind and make clear the fact that the work of the best portrait artists is not truthfully reproduced by any process of the present day, there would be a better understanding between themselves and their pupils and a closer approach to excellence along many lines of photographic work.

OBITUARY.

THE BULLETIN records with regret the death, at the advanced age of eighty-one years and nine months, of David Jackson Buchanan, who, after a painful illness of several months, passed away at the home of his son on the 18th of July last. He was the last survivor of a family of twelve children, and leaves five sons to mourn his loss, one of whom, Mr. W. P. Buchanan of Philadelphia, was called home from the late Convention to attend the funeral. Mr. Buchanan was well and widely known for his sterling qualities and genial disposition.

Items of Interest

A NEW and most interesting application of photography is now in process under the management of the Division of Vegetable Pathology of the Department of Agriculture at Washington, by which a series of photographs are made at regular intervals of various plant and tree forms, with the purpose of demonstrating by means of the moving picture machine, before schools, colleges and scientific students, the growth and development of this form of life. These pictures which may require weeks to obtain, may be shown very rapidly, and cannot but prove of great value to the study of agriculture and forestry. We understand that these experiments are being carried on by Mr. C. Francis Jenkins, the inventor of the phantascope.

THE well-known firm of photographic supply dealers in Toronto, Canada, who have so long done business under the name Sharpe, Eakins & Ferris, have dissolved partnership, the senior member of the firm, Mr. Henry F. Sharpe, having taken the business, which will hereafter be conducted under the name of H. F. Sharpe & Co.

THE photographic business formerly conducted in Baltimore by the Cummins Photo Stock Company, and by Sidney E. Walzl, has been combined under the name of the Walzl-Cummins Company—capital stock, \$20,000.

IT is a pleasure to see a good thing appreciated, and we congratulate the publishers of the *Photo-Miniature* on the fact that the first and second numbers of the magazine, treating of Modern Lenses and the Pose in Portraiture, respectively, have reached a second edition, each being now in its fifth thousand.

MR. CHARLES D. ARNOLD, who held the position of official photographer to the Columbian Exposition in Chicago, has been chosen to fill the same office at the Pan-American Exposition in Buffalo in 1901. Mr. Arnold's efficient work in Chicago is said to have netted the administration upwards of \$130,000, and his appointment is a well-merited endorsement by the managers of the Pan-American Exposition.

THE portrait seems again to be coming into vogue as an ornament for ladies' use, and a very effective and dainty thing it is often made in the photographic miniature portrait, which may be handsomely mounted in a locket or brooch, or transferred to the dial or crystal of a watch. This would seem to open up a good field of work to the photographer in a large town or smaller city, whose patronage is made up largely of the well-to-do middle class. Why not make the attempt, and try a few of your best customers with this as a side order? It will work in many places, but put the price where you will be able to lose two or three trials, if you have to, without feeling it, then make the work right and worth its price. Let it be understood that every one you turn out is "a gem," and your customers will pay well and be better satisfied than if they were low-priced.



A NEW developing agent is just announced by Actien Gesellschaft für Anilin-Fabrikation of Berlin, whose researches and discoveries have done so much to simplify and make certain the processes of developing and modifying negatives. It is put on the market under the name Imogen, and is said to resemble metal very closely in its results, but working with greater energy and clearness. It is also free from the disagreeable properties attaching to many developers, and will not injure the fingers or hands of the operator.



LOCAL photographers in certain parts of New York State have lately suffered at the hands of a German of good address, calling himself Albert Schumann, and giving his post-office address in care of a prominent stock house in New York. This party claims to be an ex-army officer, connected with the medical corps. He is said to be possessed of a scrap-book containing interviews with himself from several Southern papers, by which he is made to appear as an expert in flashlight and X-ray photography, and on the strength of these he has in several instances sold formulas and directions for use which have proven worthless.

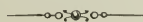


THE American Institute Photographic Salon is announced to be held at the new gallery of the Institute, 19 and 21 West 44th street, November 27 to December 18, 1899, under the auspices of the photographic section of the American Institute. The jury of selection is made up of the following gentlemen: Pirie MacDonald, E. Lee Ferguson, Hinsdale Smith, Francis C. Jones, Rudolph Eickemeyer, Alexander Black, E. Wood Perry and W. Granville Smith.

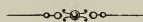
No entrance fee is to be charged, all pictures accepted by the jury of selection entitling their maker to a diploma of award. No pictures will be accepted which have been shown in New York at any previous open exhibition.

Full particulars and entry blanks may be had by addressing the Secretary, J. W. Bartlett, M. D., 19-21 West 44th street, New York.

THE convention of the Photographers' Association of Nebraska, which was held in Omaha at the close of July, was the most enthusiastic and beneficial one in the history of the Association. One of the main questions discussed was the necessity of raising and keeping up the standard of prices, Mr. A. C. Townsend, of Lincoln, reading an excellent paper on the subject. Professor Griffith was also present and delivered an interesting and instructive address.



SOME interesting experiments concerning the power of the human body to exert an appreciable influence upon photographic dry plates have lately been carried on by Dr. Ottokar Hofmann, who claims that the human rays have the property of passing through materials which are non-conductors of electricity, such as glass and rubber, producing the same effect on the sensitive film as if no foreign substance had been present, while if the intervening substance is a conductor of electricity, such as lead or silver, the rays, instead of passing through it, appear to make it active, and its own shape is imprinted on the film without showing the presence of the finger-tips at all. Dr. Hofmann found great differences in the power of different people and of the same people at different times and under different conditions. The exposures were made without the camera, the fingers being in some instances placed against the glass side of the plate which had previously been placed film down in a tray nearly filled with developer, and in others simply held in the developer as near as possible to the film side of the negative itself. In both these instances, as well as in another where a rubber plate $\frac{1}{4}$ of an inch thick was placed between the fingers and the plate, very clearly distinguishable negatives of the fingers resulted, while the same experiment with a silver dollar instead of a rubber plate showed the outline of the metal body only. These experiments are very interesting, and should be carefully followed up.



IT is reported that a consolidation of interests is under arrangement between the well-known photo-engravers, A. Zeese & Co., and the Barnes Crosby Company, both of Chicago. It is said that under this consolidation the new firm will employ more artists, photographers and sales people than any other single concern in the business. The output of the new company will amount to nearly half a million dollars annually.



THE third annual International Salon and Exhibition of the Detroit Camera Club will be held November 25 to December 12, 1899, at the rooms of the Club. The exhibition will be open to all artistic workers throughout the world, subject to conditions set forth in printed booklets, obtainable from Walter Winckler, Secretary, 106 Miami avenue, Detroit, Mich.

THE following list of awards is offered by the Indiana Association of Photographers at their sixth annual convention, to be held at Indianapolis, March 6, 7, 8, 1900.

Entry blanks and full particulars are to be had of the Secretary, W. O. Nicely, Bloomington, Ind.

Grand Prize.—The Jones Grand Prize Cup. Six pictures, 8 inches or larger.

Genre.—One picture, no restriction as to size. First award, diploma; second award, diploma.

Art Lighting Class.—Six portraits, any size. First award, diploma; second award, diploma.

Special Class.—To photographers outside of Indiana. One picture, no restriction as to size. First award, \$15; second award, \$10; third award, \$5. An entry fee of \$1 will be charged in this class.

Miniature Class.—Twelve pictures, any size smaller than cabinet. First award, bronze figure (by the H. Lieber Co.); second award, diploma.

Panel Class.—Six panels, 8 inches or larger. First award, diploma; second award, diploma.

Cabinet Class.—Twelve cabinets. First award, diploma; second award, diploma.

Class of Specialties.—Six pictures, any size, not made under photographers' skylight. First award, diploma; second award, diploma.

Class Open to Photographers in Towns of 5,000 or Less Population.—Twelve pictures, any size. First award, diploma; second award, diploma.

Class Open to Photographers in Towns of 3,000 or Less Population.—Six pictures, any size. First award, diploma; second award, diploma.

Retouching Class.—Open to employees only. Three negatives and prints therefrom before and after retouching. First award, diploma; second award, diploma.

Class Open to Photographers in Kentucky and Illinois (except Chicago).—Twelve pictures, any size. First award, diploma; second award, diploma.



THE GREAT NO-PRIZE CONVENTION, BOSTON, OCTOBER 5th, 6th AND 7th.

THE following letter from President Schervée speaks well for the success of their coming Convention. The days are past when it was an open question whether or not it paid to attend conventions, and it is now only a question whether we can or cannot arrange to be present, and if it turns out that we cannot, we know that we are the losers.—[EDITORS.]

"Of the New England Convention a great deal has been said and written, and, no doubt, you think we are up to the top mark. This, however, will be the star Convention of State Conventions.

"You will learn more and have a better time at our Convention in

three days than you could in three years staying at home. In a letter received the other day, Professor Griffith assures me of his presence with us, and who would not travel miles to listen to one of his talks and true criticism of pictures? Our friend, Charles S. Abbot, whom I know you will all be most pleased to meet, will also be with us, and do not forget Pirie MacDonald and several others in our profession. It takes good people to make a good Convention, and, somehow, they always come to the New England Convention.

"Our Committee on Entertainment have not as yet given me their report, but it is sure to be good, and the longer they keep it, the better it will be. Through the courtesy of many of our friends, there will be exhibits from all the leading photographers of the country, including the famous 'Seven Ages' by that great artist, Landy.

"There will be lectures, criticisms, demonstrations, and a jolly good time. Send your exhibit and come yourself to compare it with others. That is the only way to keep up with the times.

"Very respectfully yours,

"H. SCHERVEE."

THE CONVENTION OF '99—A RETROSPECT.

BY CHARLES A. NAST.

THE Convention held at Celoron in July last was the first of its kind I ever attended. In fact, it was my first visit east in twenty-four years. It is proverbial that first impressions take deepest root, and it was only natural to suppose that some things might strike a "new hand" peculiarly; I was therefore asked to give my views of the Convention expression in this form:

On the whole, I liked the papers very much, especially the one by Mr. Schneider, and the opening address of President Guerin. I was much disappointed in the absence of general discussions, which were supposed to follow the reading of these essays, and felt very much like airing some of my own views at times, but forbore, as I was afraid opposition might seem discourteous.

To be candid, I wondered most at the bigness of the whole affair.

The large number of members, the plan and scope of the educational features, the magnificence and extent of the photographic display, the interest and enthusiasm manifested, and the intelligence of every effort, gave the assemblage an intellectual cast seldom seen in class conventions.

The limits of this article would hardly permit me to enlarge upon the many things which impressed me favorably or otherwise, and I shall therefore confine myself here chiefly to one phase of the exhibition, which was, of course, the center of interest to us all.

Personally, I do not know how the exhibit of prints compared with those of former years, but I am told the display was superior to any previous ones.

To me it was a revelation. I had never seen so many beautiful

photographs before, many of them real works of art. At the same time, I had never met so many wonderfully bad ones, pictures which just narrowly escaped being "good things," and, worse than all, the very features which struck me as being objectionable seemed the result of careful, deliberate design.

The first exhibit on entering the gallery was Rockwood's, of New York, with the splendid daguerreotype in the center. This was a feast, and, going down the line, beauties one after another passed before the eye, and yet, after emerging from the gallery the first time, all the pleasant recollections of the many really magnificent prints were dimmed by another impression of a mass of black forbidding faces. Faces marred and scarred by ridges and seams, aggravated by a harsh light, sunk into a dull, blocky background, the whole accentuated by being printed too dark, gave one anything but a pleasant sensation.

These portraits were in imitation of the old masters, I was told.

A lecturer, an art critic, who was not a practical photographer, and, therefore, knew nothing of the limitations of the art, had started a movement in favor of studying the old masters, with a view to making the every day work of the photographer come nearer to or within the limits of fine art criticism.

This is well, but surely either the teacher was misunderstood, or the pupils learned badly.

What old master ever used black in a human face?

I have seen plenty of the old masters only recently, and my impressions are very fresh on this point. And then, the exaggerated, almost brutal, sharpness of definition! Evidently the smallest stop was used, the negative undertimed and overprinted, so as to bring out with startling, hideous accuracy every mole and line and blemish.

And these were art lightings!

If there is one thing the old masters (and the moderns as well) threw to the winds, it was excessive detail. The wrinkled brow we had, of course, but not the forehead ribbed and seamed with black lines as though burned in with a hot iron.

A quarter of a century ago a great wave of discontent swept over the land at what people called the "terrible truth-teller," meaning our lens, or rather the way it was handled. Dallmeyer fitted his 3 B with a back lens and ratchet attachment the better to get a "diffused focus." It was plainly understood that the "artists" (meaning the old as well as the new) concentrated the light and focus on the near part of the face, made it prominent, and all else subordinate.

But this subordination of minor parts never meant total absence of detail, for detail and gradation there always were, only they were not obtrusive.

At the Convention we had pictures by the score which embodied just the reverse of these essentials to an art portrait. We had knife-like, unnatural sharpness of visage, blocked shadows, devoid of all detail, and this in studied attempts to adopt the style and treatment of the old masters.

About the year 1878 *Harper's Weekly* published a series of illustrated articles describing the work and methods of a woman photographer, a Mrs. Cameron, of London, England.

Her work elicited much discussion at the time. It was admittedly deficient in technique and chemical effect, but the keynote of her treatment was to concentrate all interest in the face—always slightly out of focus, and, to make everything subordinate to the mood, pose or expression. A soft, diffused effect was aimed at.

Here was a notable example of striving to reach the ideal in photography. An attempt to get the better side of humanity to the front, to mellow the hardness of the lines and to weave about the face that atmospheric effect always seen and felt and yet so fleeting at the approach of the camera.

In the abstract photography is not truthful. We labor under the difficulty of trying to reproduce in monochrome the relative value of all the colors. Now, why exaggerate those faults necessarily inseparable from our processes by mannerisms which make them all the more glaring? Are these dark, dull, sodden portraits pleasing to the refined sense? If not, if they grate on our finer feelings, then they are not artistic, for art is but Truth beautifully told. A battle-piece may fire the heart with martial fever, or cast it down in gloom and sorrow, but the portrait must give us rest, it must be reposeful, and must satisfy. The thought must be impressed on us without effort; then it becomes part of us, and is of us.

And here we must distinguish as between Truth and simple fact. A slavish adherence to mere outline and detail would result only in a photographic reproduction, and since we must eliminate color, only an indifferent copy at that, but it would teach us nothing; and art is essentially a teacher.

True art never stops at imitation, it always leaves something for the imagination. A picture of a sand hill or cobble stone would tell of facts, but would convey to us no sentiment. A painter might give us flesh so real as to deceive and might by application to detail counterfeit plants and rocks and drapery so accurately as to excite wonder, but if this were all he tried to convey to us he would fall short in his mission. He would be a mere copyist, an anatomist, a carpet-weaver, but not an artist.

“ Give to barrows, trays and pans
Grace and glimmer of romance.”

—Emerson.

Professor Taft in his masterly impromptu remarks said: “A certain amount of detail is necessary in every art. Even in sculpture I like to see the veins and arteries throbbing, but I don't like to see a marble bust that you can comb with a fine-tooth comb.” “When I am looking upon the face of a friend I am not looking for moles or counting the hairs that come out of those moles; I am not looking for each individual pore of the skin; I am getting a general impression of the face in the mass.” Emerson says: “The prose of Nature the artist should omit and give us only the spirit and splendor. In a portrait he must in-

scribe the character and not the features, and must esteem the man who sits to him as only an imperfect picture or likeness of the aspiring original within."

Adopting the popular distinction between the useful and the fine arts according to their aim either at use or beauty, we find our art a two-fold one, and perhaps a triple one, since we rarely escape a blending of the two divisions. In photographing machinery, still life, or other inanimate objects, it becomes a useful art.

In the portrayal of the human face and form, it may become a fine art. In the first we have to do with meaningless clay, in the other the work is bathed in feeling and sentiment, and if we can now convey a thought in a simple, direct manner, we may enter the highest realms of art. Some central thought there must be, sequestered from embarrassing variety or over fullness, and when this one thing, or idea sought to be conveyed, comes out from the connection of things, and finds a ready response in us, then have we seen Art and tasted Truth.

But why study the "old" masters particularly? Art knows neither time nor age. It is only the artist who employs the symbols in use in his day and his nation, who is either new or old. No man can emancipate himself from his day, his associations. The spirit of the times, the manners, customs and beliefs of his age, all find expression in his work and ideals. For the "ideal" in art is only a form of selection. We can think of nothing which has not been suggested to us by Nature and the senses. The ideal landscape or face is but the expression of our best thoughts, every suggestion of which has been selected from the wealth of detail about us.

The work of the old masters is largely the product of a religious age. Ours is anything but that. Nor do we find in our practice the same scope for expression. Our medium is restricted. We cannot get over the limitations of the lens. To my mind the modern masters are better aids. Their field is larger, their horizon broader and higher. As interpreters for us they occupy a higher plane.

But why stop even here? Their models are but ours. There are better teachers for us than all these painters. I mean the great photographers of the land, whose work, alas! we do not see often enough. They are the ones who in many instances furnish the inspiration for the artist of the brush and pencil. Even the copyright law does not always protect.

But many of these names I did not see represented at the Convention. Just why this was I cannot say, but their absence was one of the keenest disappointments felt.

Perhaps some change in the regulations or the plan of the exhibition might induce them to come in. The complimentary displays were among the best in the gallery.



All copy for October number must be in our hands not later than September 15th.

CONTROL IN DEVELOPMENT.

By F. C. LAMBERT.

THERE can be little doubt that the greater the control which the operator can exercise over the making of the negative, the better the result ought to be. But alas, this is not always the case, because it frequently happens that the operator is, first, uncertain what he wants, and, second, uncertain how he can get this or that result with exactitude. He knows from general experience that by varying the quantity of pyro, bromide, and so on, he can get different results; but the difficulty is to know how to get a particular kind and degree of modification when he wants it.

Now in order to make experiments in this direction really practical, it is necessary to observe one or two things with some care. For instance, we must not vary several factors at once, but be content to observe the effect of varying one of them at a time, and to make the effects easily and surely seen it is also needful to have two similar plates, one with and the other without the variation.



A

B

Just by way of showing how to set about experimenting for one's-self, the following experiment was made:

1. An ordinary row of houses, all more or less similar, was chosen as a subject.
2. An ordinary rapid, unbacked quarter plate was put in the plate-holder.
3. The exposure given to the whole plate was designed to be not excessive in either direction, what one might fairly call a medium, fairly correct exposure.
4. The undeveloped plate was then cut in halves.

5. One part (*A*) was developed in what we may, for the moment, call "normal" proportions of pyro, bromide, soda carbonate and water.

6. The second part (*B*) was developed in exactly the same proportions of pyro, bromide and carbonate except that just five times the water was used in this case.

Or, we may say that the strength of the *B* developer was one-fifth the strength of the *A* developer.

Now of course, development with *B* was not only slower in starting, but the growth of density was also much slower. The idea was, not to produce two exactly equal halves, but rather to show that by thus diluting the developer with water we can produce a negative of a decidedly different character.

These two halves of the plate were then put side by side and so printed together (on P. O. P.) for the same time.

The reader must please remember that the reproduction is from a print, and is not quite the same thing as the contact print itself.

The negative *A* might fairly be described as strong, plucky, vigorous, contrasty and of such a kind that, even if printed in direct sunlight, would still yield black and white rather than much half tone. On the other hand, *B* is decidedly inclined the other way, chiefly half-tones, thinish, delicate. Note one point only, the top and side of the pavement. There is (comparatively) much less difference between the shadow parts than the top of the stones. Or again, compare the pillars of the nearest house (No. 6) and the middle one (No. 5). These are practically the same or a yellowish cream (both recently painted).

The portraitist will at once see the practical application of this experiment as regards the treatment of light draperies.

Although the reproduction can hardly be expected to show it, yet it may be said that examination of the two negatives side by side shows that we get as much shadow detail in one as the other. The reader must not be hasty in drawing conclusions from say such points as the doors of houses 5 and 6, for that of No. 5 is dark green and of No. 6 a deep red. Moreover, that of No. 6 was open at the moment of exposure.

Now, from this experiment we must not hastily draw any sweeping conclusion. For instance, it would not be safe to say that "diluting the developer always gives increased softness" or less contrast, for practical men know that if a fairly strong (in alkali) developer be allowed to act for only a very short time on a normally exposed plate the result is softness, but that if this same developer be allowed to go on acting for some considerable time we get not softness but hardness. And again, if the diluted developer be allowed to act for a very long time we certainly get some further contrasts, but with pyro the increase of stain becomes a practical drawback, and moreover, our object is not to get density, but delicacy, and with some fair degree of certainty.

It may be of interest for the moment just to quote the developing formulas:

Pyro solution (P).—Metabisulphite of soda (or potash), 100 grains. Dissolve in 6 ounces of water. Pour this into an ounce bottle of pyro. Filter and dilute with water to make 9 fluid ounces. (One dram solution contains just about 6 grains pyro.)

Bromide solution (B).—Potassium bromide, 8 grains. Water, 1 ounce.

Soda solution (S).—Soda sulphite, 1 ounce. Soda carbonate, 3 ounces, dissolved in enough water to make 10 ounces.

To develop, take 1 dram *P*, 1 dram *B*, 1 ounce *S*, and dilute to 4 ounces for normal strength.



THE GENERAL ARISTO COMPANY.

THE following communication has been received from Mr. C. S. Abbott, Secretary of the General Aristo Company, and is self-explanatory.—[EDRS.]

The announcements of the Associated Press throughout the country relative to the organization of this great consolidation of paper interests undoubtedly surprised many of the thousands of American Aristo consumers, and has led a large percentage to wonder what the outcome is to be and how it is to affect their personal interest.

Visions of increased prices, arbitrary terms, and indifference to the quality of the goods which always accompany the popular idea of trusts and combinations have undoubtedly run riot through the minds of more than one. All such visions will soon be dissipated upon a proper understanding of the facts.

In the first place, the General Aristo Company is not a trust in any sense of the word. It is a company formed which purchases outright the paper business of the Eastman Kodak Company, the American Aristotype Company, the Nepera Chemical Company, the New Jersey Aristotype Company, the Photo Materials Company, and the Kirklands Lithium Company. It is an absolute consolidation under one company and one capitalization. It is not a combination of interests of several individual concerns handled by promoters who do not understand the business and have no interest at stake except the profit of stock manipulation, but a company which pay down good money for these various companies, and have as much at stake in the proper care of their consumers and in the reputation of their goods as any one of the individual concerns had previous to the consolidation.

As far as monopoly is concerned, no consolidation could have a greater one than the American Aristotype Company have had during the past ten years. This monopoly was not secured through letters patent, or trade combinations in restraint of trade, or any cinch of any kind. It was secured through the fact of its giving a product of merit at a price that could not be undersold, together with a liberal policy in handling consumers and trade which could not be excelled. It is not flattery, but a fact which the photographic fraternity would cheerfully testify to, that no concern ever existed which gave better value for

the money or has expended more for the education and entertainment of the fraternity than the American Aristotype Company. When monopolies come from such conditions they are welcome to the consumers for the consumers themselves gladly create them. The General Aristo Company propose to secure their business on equal merit, and the American Aristotype Company becomes part of the General Aristo Company.

There will be no increase of price, and the company will not permit any competition to undersell them, quality considered. The General Aristo Company will control for North America the raw paper products of the Rives and Steinbach mills of France and Germany. Aside from this their power of purchasing other materials will be greatly enhanced, which will enable them to give better goods and better service for the money than any other photographic concern on either hemisphere.

So far as the American Aristotype Company's plant of Jamestown is concerned, there will be no change which can possibly affect the quality of goods. Mr. R. C. Sheldon, who has been the managing superintendent of the works for the past ten years, will continue in the same capacity, together with his trusted employees, and Mr. Chas. S. Abbott, as secretary of the new organization, will also continue to make his headquarters at Jamestown. Similar precautions to preserve the merit of the goods in all other plants of the General Aristo Company will be equally as well safeguarded.

Therefore, consumers will have everything to gain and nothing to lose by the organization of the General Aristo Company.

NIÉPCE AND DAGUERRE.

THE following translation of the original agreement entered into between Niépce and Daguerre we reprint from the *British Journal* of August 11th, as being of special interest to the fraternity. The translation is made from a fac-simile reproduction of the original document, which was lately published by the *Bulletino della Società Fotografica Italiana*.—[EDS.]

BASIS OF PROVISIONAL AGREEMENT.

"The undersigned, M. Joseph Nicéphore Niépce, landowner, residing at Chalon sur Saône, department of the Seine and Loire. of the one part, and M. Louis Jacques Mandé Daguerre, artist painter, Member of the Legion of Honour, and Manager of the Diorama, of the other part, hereby enter into the following provisional agreement for the purpose of founding a partnership :

"Whereas, M. Niépce has made certain studies for the purpose of recording the views of Nature by a new method without the aid of a draughtsman, and various experiments constituting this discovery have been the result. The said discovery consists in the spontaneous reproduction of pictures formed in the camera obscura. And whereas, M. Daguerre, to whom the discovery has been made known, perceiving its great interest and the great improvement of which it is capable, has offered to join M. Niépce for that purpose, and for securing all the benefits which may be derived from this new kind of industry. In view of these facts, the parties hereto have agreed to the following provisional and fundamental conditions of partnership :

"1. A partnership shall be formed between MM. Niépce and Daguerre, under the commercial style of Niépce-Daguerre, for the joint purpose of perfecting the said discovery made by M. Niépce and improved by M. Daguerre.

"2. The partnership shall be for the term of ten years, dating from this fourteenth day of December, and prior to the expiration of that term shall only be dissolved by mutual consent. In case of decease of either of the partners, his heir shall succeed to the partnership for the remainder of the unexpired term of ten years. Further, in the event of the decease of either of the partners, the said discovery shall only be published under the joint name specified in clause 1.

"3. Upon signature of this agreement, M. Niépce shall disclose to M. Daguerre, under the seal of secrecy, which shall be so kept under penalty of all expenses, damages and interest, the principle upon which the discovery depends, and shall furnish an exact and complete written statement of the nature, the working details, and the different modes of applying the processes connected therewith, in order that the experiments for perfecting and utilizing the discovery may be carried out as completely and quickly as possible.

"4. M. Daguerre, under the same penalties, undertakes to preserve with the greatest secrecy the fundamental principle of the discovery, and the nature, the use, and application of the processes which shall be disclosed to him, and will co-operate, as far as possible, in the improvements which may be deemed necessary to the best of his abilities and talents.

"5. M. Niépce gives and cedes his invention to the partnership, as an asset, in consideration of half the profits which may be derived from it, and M. Daguerre contributes a newly designed camera, his talent and his industry, in consideration of the other half of the said profits.

"6. Upon signature of this agreement, M. Daguerre shall disclose to M. Niépce, under seal of secrecy, which shall be so kept under penalty of all expenses, damages and interest, the principle upon which the improvement in his camera depends, and will furnish an exact written statement of the nature of the said improvement.

"7. MM. Niépce and Daguerre shall contribute in equal shares the capital which may be found requisite for the partnership.

"8. When the partners think it desirable to apply the said invention to the process of engraving, that is to say, when they have decided what advantages it may possess which would enable an engraver to make a trial plate, MM. Niépce and Daguerre hereby agree to select no one but M. Le Maître for carrying out the same.

"9. Upon execution of the final agreement, the partners shall mutually appoint a manager and a cashier of the firm, which shall be located in Paris. The Manager shall conduct the business as decided by the partners, and the Cashier shall receive and make all payments as ordered by the manager in the interests of the firm.

"10. The Manager and Cashier shall be elected for the term of the present agreement, but shall be eligible for re-election. Their services shall be gratuitous, or a portion of the profits may be awarded them, as the partners may think fit, when the final agreement is made.

"11. The Cashier shall render an account to the Manager each month, showing the position of the firm, and every six months the partners shall divide the profits, as stated above.

"12. The Cashier's accounts, showing the position of affairs, shall be balanced, signed and attested each half-year by both partners.

"13. The improvements which may be made concerning the discovery and the improvements in the camera shall be the property and for the benefit of both partners, and, when they have attained the object in view, they shall make a final agreement upon the basis of these presents.

"14. The net profits of the partners derived from the firm shall be shared equally between M. Niépce, as inventor, and M. Daguerre for his improvements.

"15. Any dispute which may arise between the partners concerning this agreement shall be decided by arbitrators appointed by each party privately, according to Article 51 of the Commercial Code, and their decision shall be binding, without appeal or revocation.

" 16. If it should be decided to dissolve the partnership, the liquidation shall be undertaken privately by the Cashier, or by both partners together, or by a third party, to be appointed privately, or by some person appointed by a competent Court at the instance of the more active partner.

" The whole of this agreement has been entered into provisionally by both parties, who, for the execution of these presents, elect as domicile their respective residences, as specified above.

" Executed and signed in duplicate at Châlon sur Saône the fourteenth day of December, one thousand eight hundred and twenty-nine.

" Approved by me, though not written by my hand,

" J. N. NIÉPCE,

" Approved by me, though not written by my hand,

" DAGUERRE.

PRINTING PROCESS WITH BICHLORIDE OF MERCURY AND CITRATE OF IRON AND AMMONIA OR TARTRATE.

BY PROFESSOR E. VALENTA.

IF paper, previously prepared with an arrowroot solution, is coated with a mixture of bichloride of mercury and citrate of iron and ammonia solution, and is then left to dry, a printing paper will be obtained which differs very little in its exterior part from the nitrate of silver—citrate of iron and ammonia printing paper.

If paper prepared in this way is exposed to light under a negative the exposed parts will become somewhat brown, and a pale brown picture upon greenish ground is obtained. If this picture is put in water the preparation will dissolve at all those parts which had not been exposed to light, and a pale brown picture will remain.

The print obtained in this way, when well washed with water and treated with a suitable alkalic developer, will give a strong picture, which has a handsome blue-black color (particularly if it was dried at a heat of 80 to 90 degrees Cent.).

My first idea was that during exposure, under action of the ferrid salt, which is reduced to ferro salt, the chloride of mercury is changed to insoluble chlorure of mercury (calomel), which, treated with sulphite of soda (after washing or directly), would furnish a black mercury picture.

This supposition was strengthened by the behavior of the washed picture towards diluted ammonia, in which the picture becomes stronger. The fact that the picture, when treated with water, changes very little, while the chloride of mercury of the unexposed parts, as also the citrate of iron, are completely removed, would seem to confirm this view. But opposed to this is the circumstance that I did not succeed in obtaining any coloration of the washed original picture.

The process which really does take place on exposure of the mixture seems to consist in the formation of a ferro mercury salt, which is insoluble in water and is changed by ammonia under formation of brown basic salts. The picture treated in this way can also be strength-

ened with an alkalic developer, as experiments have proven, whereby bluish black tones have been obtained.

The process gave me results worthy of consideration, and it is my intention to continue my investigations and publish them at a later time.

At present I will only mention that a preparation consisting of

<i>A.</i> —Citrate of iron and ammonia (green salt).....	40 grams,
Citric acid.....	4 “
Water.....	200 “
<i>B.</i> —Gelatine.....	6 grams,
Water.....	100 “

was mixed warm and in yellow light with

<i>C.</i> —Alcohol.....	100 cubic centimeters,
Chloride of mercury.....	24 grams,

and gave very encouraging results. The paper is coated with this liquid lukewarm and is left to dry. Printing under a fairly dense negative. The prints are washed well and after an ammonia bath (5:100) and repeated washing in water they are put in a normal developer (hydramin), and the final result will be strong brown pictures, which, when dry, assume a bluish black coloration.

Translated by

HENRY DIETRICH.



THE RELATION BETWEEN DENSITIES IN NEGATIVES AND TONES IN SILVER PRINTS.

By W. K. BURTON, C. E., F. R. P. S., IN “PHOTOGRAPHY.”

THIS is a matter that must always be of interest to photographers so long as the commonly-used process is that of producing first a negative, and from that one or more positives, generally on paper. Some recent practice and experiment brought this forcibly to our mind.

Throughout what we have to say we assume that the gradation of the negative is correct. We find if we take various kinds of silver printing-out processes in which fixing (in all cases we know of by hyposulphite of soda) is necessary, this fixing is accompanied by a reduction in the strength of the print. It seems to be a matter apart whether the process involves “toning” or not. It is commonly assumed that this reduction is proportionate. That each tone is reduced, say 10 per cent. or 20 per cent., or what it may be, but there can be no greater mistake. To illustrate what we mean, we take a negative with correct ratios of density, but thinner than is desirable for the particular silver process to be worked. A print is made from this on, say, albumenized sensitized paper, but this print is not either toned or fixed. It is, of course, very difficult to actually measure the gradations of darkness on such a print, for the reason that such measurements involve the use of white light on a surface still sensitive to such light, but from some experiments we have made, and perhaps more by judgment, which we trust, is not very bad, we conclude that the gradation is fairly correct. That it is the converse of that of the negative.

Such a print is, however, useless. It must be fixed, and fixing by any process we know of reduces it to a miserable ghost of an image, and this apart altogether from toning.

Take now a negative with the same ratios of density as the last, but with a

"steeper grade"—with a greater maximum density. Such a negative as is considered just right for a "silver print." From this a print is made that is far too dark unfixed, that has a certain excess of darkness that it is necessary to allow for the fixing, and that can be gauged only after some experience. This print will have all the tones too dark, but relatively they will probably be fairly correct, except in the blacker parts, where it will be found that several distinctly different shades of density are all rendered by one uniform tint, the darkest the paper is capable of giving. Let this print now be fixed (toned or not), and, without test of any kind, but by mere inspection, an eye not blind can see that the greater part of the tones are "out." The reason is quite simple. The reduction has not been proportionate for different tones, but rather more nearly a constant.

To take an example, assuming that the gradation is not continuous, but goes up by leaps or steps, and leaving out of consideration those shadow tones which are all uniformly dark before fixing, we can imagine the darkness of certain tones to be represented by the figures 0 (pure white), 1, 2, 4, 8, 16. Now, if the reduction by fixing were proportionate, and, for mere convenience of arithmetic, one-eighth of the whole, the result would be represented by the following figures: 0 (pure white) $\frac{7}{8}$, $1\frac{3}{4}$, $3\frac{1}{2}$, 7, 14. The ratios would still hold good. But it is nothing like this. On perfectly fresh paper that has been well protected from actinic light it is something much more like this: 0—2, 2—2, 4—2, 8—2, 16—2. Or —2, 0, 2, 6, 14.

Of course, the —2 is not recognizable in photography, but becomes 0, or pure white. It will be seen, however, that ratios are completely altered. This is why the relative tones become palpably incorrect.

And this brings us to the practical part of what we write. It refers us to the old practice known as "sunning," that is to say, exposing the whole surface of the paper, either before or after printing, to light, enough to have some perceptible effect upon it. For many years we have used this "dodge" for negatives that were over-dense for silver printing-out papers of whatever kind, but it has always been with a kind of shame, or feeling that we were doing something not legitimate, and we were careful to keep it secret from the "superior" persons of our acquaintance.

Now, as a result of recent experiments and of much thought on the subject, we conclude that the practice is theoretically correct; that a picture more just in tone, results with any kind of silver printing-out paper if a somewhat dense negative is used, and the paper is "sunned," before or after printing, to just the right amount, than if a thin negative is used and the paper is not sunned.

"The right amount." That is the question. In our hypothetical figure case it should be represented by exactly "2," so that the constant of reduction should be supplied beforehand, or replaced afterwards. In practice it should be just as much as will be removed by the processes between the printing and the finishing of a picture; that is to say, a piece of paper should be sunned to just such an extent that (unprinted) it will be just only whitened by fixing, etc. The time necessary varies, of course, with the light, but also with the nature of the paper and its age. Indeed, the darkening of age may often take the place of sunning, though, for no reason we can think of, the result is always a little different, sometimes better. It is due to the fact that ageing gives nearly the same effect as sunning, that from many negatives better prints are got on old paper than on fresh, often much to the astonishment of the printer! A little practice will enable the printer fairly well to gauge the right amount of "sunning," the paper being exposed, whilst a little part of the edge, or several parts, are protected. It is several times examined in a dull light, and when there is a very appreciable but not great darkening, the sunning is probably about right, but a series of experiments on scraps of paper, sunned for different times with parts protected, then fixed, etc., is advisable.

Some photographers believe that a better effect is got by sunning paper after printing than before. We can see no theoretical reason why it should be so; moreover, a long experience has totally failed to show that it is so.

We have written of the reduction more resembling a constant or uniform reduction than a proportionate, but we are not to be taken as stating that it is actually a constant.

EDITOR'S LABORATORY.

THE following tests were made by the Editor, personally, last month, and, being actual results, bare of all hearsay or conjecture, will afford our readers a correct idea of the quality of the articles tested. All manufacturers of photographic goods are invited to submit samples for testing.

Toning Aristo-Platino with Single Toner.—Some months ago the American Aristo Company announced that it was possible to obtain proper tones direct, that is, in one bath, instead of two, as formerly, when the washed print was first toned slightly in a gold toning bath and then finished in a platinum solution. The announcement that the paper would work fully as well in one bath meant a great deal to users of the Aristo-Platino paper—a saving of gold and of time—and was eagerly listened to by all. We have heard this claim made before by other companies, and have never until now seen it result in acceptable work. The tones were muddy, seldom black, and the shading of a vignette invariably ended off in dirty, coffee-colored tints. However, to hear the announcement from a company of the American Aristo Company's prominence and reputation meant quite another thing, and we at once procured a bottle of Single Toner as well as of Aristo platinum, which is used for strengthening the Single Toner bath, if necessary, and proceeded to follow the directions closely, as anyone should do in using a new article. We printed a quarter-gross of 5 by 7 Aristo Platino paper and some little Aristo, Jr., and when all were done laid them face down in a large tray containing a little water. When all were wet and flat we filled the tray with water and let them soak some minutes. Then we changed each print to another tray of water, handling each separately, and continued until all free silver appeared to be washed out, about six changes being required. Then the prints were ready for the single toner, and a bath composed of one dram of Single Toner and one quart of water was made ready. We immersed the prints a dozen at a time in the bath, and turned them about to prevent uneven toning. The red color of the prints soon started to disappear, and in its place a rich, warm black began to appear. We allowed the prints to keep on toning, however, as no sign of the least deterioration was apparent. The white became exquisitely clear, the darkest and the lightest parts all toned well, showing no fading out or yellowing, and finally they were done, and after washing were fixed in hypo bath of the designated strength. In toning the rest, the rich olive blacks, which appear just before the final jet black tone, appealed to our sense of the beautiful, and we removed some of the prints at that stage, securing thereby some of the very finest prints we have ever made, as good as carbons, minus the greasy look of the latter. When the bath began to work slow on the last batch we added a little platinum solution, as directions call for, and toning went on in absolutely perfect manner. We noticed that if any uneven toning showed at the start, it all toned down to an even black in the end. Red spots occurred upon two prints, and these were removed by

touching them with the finger-tip moistened with platinum solution. The trial was a perfect success, and as it is the first time we have known of a paper upon the market which would act in the manner described (and none other save home-made plain silver paper), we have deemed the result of this trial well worthy of calling our readers' attention to, as it is not only a perfectly simple process which any beginner can succeed with, but affords prints of rare beauty, prints unlike any others, as pure in tone as will ever be seen, wonderfully fine.—Reprinted from *The Photo-American*, August, 1899.

YELLOW FOG IN TONING BROMIDE OF SILVER PICTURES WITH URANIUM.

DR. E. VOGEL.

THE toning of bromide of silver pictures with uranium is a good deal in use now, as in this way the cold tone of a picture can easily be changed to an agreeable brown or terra-cotta color.

But a good many complain that pictures toned with uranium lack pure whites, and that the latter show a more or less yellow tint. This yellow fog may originate from either of two causes, insufficient fixing or washing out of the fixing soda, and not sufficient washing of the pictures toned with uranium. It is by no means sufficient to wash the toned pictures, until the water has lost its fatty appearance, but the washing must be continued until the lights of the picture appear purely white. Concerning the duration of washing the papers will differ. Those with a thick gelatine coating require an essentially longer time for washing than those with a thin coating. Regarding the well-known property of pictures toned with uranium, that their tone is reduced in prolonged washing, it is necessary that pictures whose washing time has to be extended to obtain pure whites should have a little more pronounced reddish color than the tone of the picture is to be when finished.

The washing of the picture is very much facilitated if the uranium intensifier for toning is taken more diluted than that for negatives. This will also to some extent prevent the formation of spots.

The following mixture gives good results:

Nitrate of uranium (1:100).....	25	cubic centimeters.
Red prussiate of potash (1:100).....	25	“ “
Glacial acetic acid.....	5	“ “
Distilled water.....	150	“ “

This solution corresponds with the well-known uranium intensifier in a quadruple dilution. The diluted solution naturally works considerably slower than the intensifier which is not diluted; still the toning proceeds rapidly enough. It is recommended to renew the solution frequently, as a fresh solution gives the best results.

If the above-mentioned diluted uranium intensifier is used, and the necessary care is devoted to washing, there will be no necessity of complaint for defective white of the pictures. It is also recommended not to tone or wash in broad daylight, the uranium solution being very sensitive, particularly in connection with paper. Paper coated with uranium intensifier colors brown in a short time when exposed to light, and the whites will also suffer for that reason.

Translated by HENRY DIETRICH.

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

HOW to Make Use of Defective Photographic Dry Plates.—A use for foggy or light-struck dry plates will be found, if a reversed negative for lichtdruck or any other purpose is to be made from an original negative. The process consists in bathing the defective and, of course, unfixed dry plates, in the following sensitizing solution:

Bichromate of potash.....	20 grams.
Water.....	500 cubic centimeters.

To this solution a few drops of ammonia are added, until it appears light yellow. The plate is bathed for ten minutes and is left to dry in a darkroom. Artificial heat is to be avoided.

When the plate is dry, it is exposed under the original negative from fifteen to twenty minutes, under strong pressure, to avoid unsharpness. The time of exposure depends upon the density of the original negative. When the printing is finished, the plate is washed in pure water from one to two minutes, to remove the superfluous chrome salt and developed in daylight in the oxalate of iron developer until the desired strength has been obtained. Fixing and washing as usual. During development a gray fog will show, covering the whole film. But this is of no consequence, as it is easily removed afterwards in a clearing bath, consisting of:

Citric acid.....	20 grams.
Alum.....	20 “
Water.....	400 cubic centimeters.

The result will be satisfactory and the duplicate will be equal to the original.

The process is based upon the light-sensitiveness of the chrome gelatine, which, corresponding to the exposure through the original negative is more or less hardened. The coloration of the silver bromide, imbedded into the chrome gelatine is reversed by the developer. All parts covered in the negative are not hardened or only a very little. The developer will therefore penetrate into the film first at these places and blacken the same. The half tones will follow gradually. The strongly exposed lights will not let the developer penetrate, and therefore remain clear.

Production of a Line Drawing and a Good Cliché in Three Hours.—When hurried line pictures are required for newspaper publication, an ordinary print from the negative is made on celluloid or ferro prussiate paper. This print, after drying, is drawn over in a suitable manner and bleached. The silver or iron picture thus disappears and the drawn lines appear clearly. A collodion negative is then made to be transferred upon zinc. All this will not be required by the following simple treatment, described in *Les Nouvelles Scientifiques et Photographiques*.

From the ordinary negative (the dry plate) a print is made by means of the sciopicon on chloride of silver gelatine paper. The

desired size can in this way be obtained. After development, washing and drying of the print, this is laid upon a glass plate, film side up, and is coated with the following mixture:

Starch.....	8 grams.
Glycerine.....	8 cubic centimeters.
Water.....	100 “

The starch is stirred as usual in a little water, and after addition of the water and glycerine it is cooked with constant stirring, until the mass assumes a bluish transparent color. The vessel is then removed from the stove, but the stirring is continued for a few minutes. Some experiments made by the writer proved that the glycerine addition can be reduced to one-half. The principal thing is that no lumps form during cooking. The coating will dry quickly, and the sheet is then fastened with pins and a few sheets of blotting paper as support. The surface is rubbed over with finely powdered resin and a cotton tuft, and the desired drawing is then made with autographic ink or soft crayon. If correct drawing material has been secured, an easy work is assured. Instead of starch the following preparation may be used:

Solution of gum arabic.....	200 cubic centimeters.
“ glycerine	10 “

This mixture is particularly recommended for beginners. In one hour a sketch may be ready for printing, and in two to two and a half hours more an excellent cliché for transfer upon zinc and etching can be produced. That the time of three hours refers only to medium size and not too fine work, need not be mentioned.—*Photo Chronicle*.

Developing After Fixing.—Kogelmann, in Graz, while making investigations into the latent picture substance some time ago, showed, that upon completely fixed dry plates the picture can be developed with physical developers. Dr. Neuhauss also communicated in the September, 1898, number of the *Photographische Rundschau* his experiments made to that effect. Many amateurs may also have experimented, but undoubtedly with the same negative results as the writer. The picture did not come, or, if at all, so faintly that practically it was of no use. After repeated experiments, however, I think I have now found a process, which, in comparison with Dr. Neuhauss' formula, is an improvement.

Dr. Neuhauss' original formula is :

Distilled water...	100 cubic centimeters.
Ammonium sulphocyanide	24 grams.
Nitrate of silver	4 “
Sulphite of soda	24 “
Fixing soda.....	5 “
Bromide of potassium solution, 1:10	6 drops.

For use, Dr. Neuhauss mixes 6 cubic centimeters of this solution, 54 cubic centimeters water and 2 cubic centimeters Rodinal. With this formula, however, I never obtained a picture.

I now recommend replacing the Rodinal of above solution by 30 to

40 cubic centimeters of metol sulphite of soda solution, as used for the composition of the ordinary metol developer. The proportions are:

Metol.....	15 grams.
Sulphite of soda.....	150 "
Water.....	1,000 cubic centimeters.

After one to two hours, according to time of exposure, the picture appears upon the completely fixed plate, when looked at from the surface, with all details as a positive. In the transparency, however, it can hardly be seen. After two hours the picture has also strengthened in the transparency, and further development may be discontinued. The picture appears in the transparency, when looked at from the surface, as a strong positive in white. The plate is now washed, and is put into the normal mercury intensifier. The picture becomes first black, and, after prolonged action again, whitish gray. This state has to be waited for. The plate is then washed again and put into a 10 per cent. sulphite of soda solution, in which the negative intensifies with a handsome blue-black color. This finishes the development. The plate is then washed and dried in the ordinary way. All operations can be executed in daylight, except the fixing of the plate, which has to be done in the darkroom.—DR. HASCHEK.

Solutions of nitric or tartaric acid, as also their double salts with ammonia and iron, as applied in photography, should always be freshly prepared, as these solutions possess no great durability and show formations of mildew after a short time. Particularly in preparing citric acid stock solutions for emulsion purposes, this is the case. Hugo de Vries has observed that solutions of citric acid will decompose by coming in contact with the atmosphere, and they will even more or less decompose in corked bottles.

Varnishing Bromide of Silver Pictures.—These pictures generally look less brilliant after drying than when in a moist condition, so that the shadows particularly frequently appear monotonous and flat. By varnishing them they will have the same brilliant appearance as when wet. The following formula (after Eder) is recommended :

Borax	40 grams.
Bleached powdered shellac.....	100 "
Water	500 cubic centimeters.

By heating, the solution will be in proper condition much quicker. The addition of a little alcohol (50 to 100 cubic centimeters) is of advantage, as this will clear the varnish. For use, filter the varnish into a tray and let the pictures float in the same, film down, and suspend to dry. By suitable dilution of the varnish with water a more or less glossy surface can be obtained.

An Energetic Reducer.—If a strong uniform reduction appears desirable, an energetically acting solution can be applied, consisting of

SOLUTION I.

Fixing soda.....	5 grams.
Water	100 cubic centimeters.

SOLUTION II.

Red prussiate of potassium.....	5 grams.
Water	100 cubic centimeters.

Mix equal parts of I and II.

THE MOST IMPORTANT PHOTOGRAPHIC CHEMICAL.*

BY C. F. TOWNSEND, F.C.S.

THERE is a certain chemical which enters into the composition of every photographic plate, of every developer, and of every fixing bath; it is the cheapest photographic chemical and yet the most important, and its name is water. In the absence of this important constituent no chemical action appears to take place, while the results of any chemical or photographic operation are largely influenced by the proportion in which this material is present.

Water is almost the nearest approach to an universal solvent that the world possesses, and there is hardly any substance that will not dissolve, to a small extent, in water, although for organic materials, such as resins, other solvents are frequently more convenient. Water, like everything else, is made up of very tiny particles, smaller than any microscope can distinguish, and these particles are always on the move, the rate at which they progress depending upon the temperature. At freezing point they are almost motionless, but as the temperature rises they move faster and faster, until at boiling point they fly out of the liquid altogether, and become vapor or gas. The distance between these particles, which never quite touch, depends upon the temperature also; as the heat rises they get farther apart.

When a substance, such as potassium bromide, dissolves in water, the particles of bromide behave much in the same way as the particles of water do when it boils; the particles of bromide insert themselves into the spaces between the particles of water. From this it is quite clear that the larger the spaces between the particles of water, the more bromide it will be able to dissolve. It has been said that the spaces between the particles of water become greater as the water becomes hotter, so that hot water will dissolve bromide (or most other substances) much faster than cold. If when the water is hot it has dissolved up as much bromide as it can, so that all the spaces between the particles of water are filled up with particles of bromide; the latter will be squeezed out as the water cools and the spaces between the water particles contract, part of the bromide being redeposited as crystals, while the water still remains saturated with the salt. From this the difference between a hot saturated solution and a cold saturated solution will be seen at once.

The power of gelatine to take up water has many important applications in photography. In making emulsions, the proportion of water must be carefully adjusted. In collotype, water is the important factor; those parts of the collotype plate that have been exposed to the light will not take up water, while the unexposed parts will do so; consequently when the inking roller is passed over the surface the damp portions refuse to take the greasy ink, which sticks to the dry parts, and is transferred thence on to the paper. The inking roller itself will not work properly unless the gelatine has its proper supply of moisture, an excess being fatal to good printing. In other departments of process work, the permeability of the resist in the etching bath depends largely on the quantity of water contained in the gelatine.

Water is a very bad conductor of heat. If a tall jar be heated at the top, it will be found that, although the water at the top may get very hot, the water at the bottom remains almost, if not quite, as cold as it was at first. If, however, the heat be applied at the bottom, each particle as it gets hot expands, gets lighter, and rises to the top, so that there is constant circulation going on, resulting in almost equal heating of the whole of the water.

Ice, like every other solid, requires heat to convert it into a liquid. Ice is slightly lighter than water, and floats naturally, so that in melting it is always in contact with the hottest part of the liquid which always rises to the top. Most of the solids used in photography are heavier than water, and sink to the bottom, where, if left undisturbed, they dissolve very slowly. If heat be applied to the bottom of the vessel, the water is kept in circulation, but there is a danger in heating a vessel with a layer of crystals at the bottom; they absorb so much heat that a comparatively

* *Photography*, July 27, 1899.

cold layer forms at the bottom unless they are constantly stirred. The bottom of the vessel is hot compared to the crystals, and if made of glass or porcelain will probably crack. A safer way is to pour boiling water on to the crystals, or to suspend them in a muslin bag, if one is making up a large quantity of solution.

On account of its strong solvent action, mentioned at the beginning of the article, water has a tendency to dissolve everything with which it comes in contact, to a greater or less extent, until all the interstices between the water particles get filled up, so to speak. Water always dissolves a considerable quantity of the principal gases in the air, namely, oxygen, nitrogen and carbonic acid. The first-named gas causes the reducing agent in developers to deteriorate, so that before making up a quantity of developer the water should be boiled to drive off the gases, and used whilst still warm. The presence of the carbonic acid in rain water assists the water to dissolve the chalk in the rocks through which it passes, so that most natural waters contain lime, besides other impurities. In boiling the water, the carbonic acid is driven off, and the chalk falls to the bottom. The gypsum, or sulphate of lime, however, still remains in solution, and can only be removed by distillation, which furnishes water practically pure, from a photographic point of view. The drawback to spring or river water that has not been distilled is that the lime causes oxalate, and some other solutions, to become turbid. Besides this all natural waters contain chloride, generally common salt, which throws silver out of solution as a white precipitate. The turbidity seen in the first water used for washing printing-out paper, or ordinary sensitized paper, is due to the chlorine in the water uniting with the silver. Rain water, unless the roof is very dirty, may be used for making all photographic solutions, but should be boiled for use with developers. If the rain water butt is left exposed to the light, a microscopic green plant grows in it, which makes the water muddy and objectionable.

RETOUCHING.*

BY REDMOND BARRETT.

THERE are many who cannot or will not recognize the legitimacy of this art in its association with the science of photography. I can scarcely think this fair, as, however much amateur photography may be independent of retouching, professional portrait photography is commercially very much dependent upon it for success. I do not wish to insist upon retouching being the chief point, but I do insist that it is an essential one, in the production of successful portraiture. The retoucher should work in closest sympathy with the operator, and help him to carry out the artistic notion to which he first gives existence in the shape of a negative. The retoucher necessarily comes second, as the negative in the first instance must be the operator's production. I consider retouching a natural offspring of the simple process of development, for it is in a manner a process which enables the operator to accomplish the very difficult task of intensifying the negative in certain minute parts where intensification is necessary—an operation which would be quite impossible by ordinary chemical treatment in the usual way. The process first adopted for carrying out retouching was a very rough and ready one. The operator in most cases usually worked out the blemishes with water-color, some manipulators using one tint and some another. The very earliest color used for this purpose was, I believe, blue; then followed neutral tint, Payne's grey, and kindred tints, until finally the lead pencil took a firm hold to the complete exclusion of all other means. Its working was easier and more convenient, to say nothing of its greater reliability, the actinic properties of the deposit being more easily and justly appreciable than those of any vehicle employed in any of the other methods formerly in use.

Retouching was first introduced in the old wet-plate days, and, to a few of the more advanced and up-to-date workers in photography about the middle of the century, proved the means by which big positions in the profession were secured, as

*A paper read before the Royal Photographic Society, of England, from *The Photographic Journal*.

well as enabling them to considerably inflate their banking accounts. In those days it was the custom to stipple out the blemishes with blue or neutral tint, as I have already stated, and thus to build up the defective parts of the image so as to produce a more pleasing picture than would otherwise be obtainable from the untouched negative. Of course, there was but small scope for variety of method or treatment in the working of this style, as the most natural and easy means of applying a flowing color to a plate so highly sensitive to moisture would be to stipple the same on with a moderately dry brush. With the adoption of the lead pencil for retouching, however, all this was very much altered. There was imparted a greater variety of possibilities, to be limited ultimately only by the artistic feeling of the artist carrying out the work. This limitation, I am sorry to say, is but very ill-defined, and seems to be shifted about in the most reckless manner to suit the temperament of the artist, or of the photographer by whom he is employed, or the whim of the customer. It is much to be desired that a definite limitation should be fixed, and a positive theory adopted from this standpoint as to what good retouching really means.

I regret that there seems to be such a divided opinion as to what is and what is not the correct way to carry out this interesting work, as also to what extent that work may sensibly and artistically be carried. As I say, limitation is but very ill-defined, and to add to the general confusion the various writers on the subject have laid down divers and contradictory methods as being the only correct ones to be used in the working. The "cross-hatch," the "dot and tail," and the system of touches resembling the letter "S," are all set down as the best or only stroke or touch which can produce artistic retouching. These touches are all very good and nice in their way, and will give very charming and pretty effects; but I cannot see that the results are quite artistic, nor are they at all natural or calculated to produce sound portraiture. I have always held that retouching is not such a poor art as to be run on such narrow lines; and I have always endeavored to uphold that there should be no such thing as a regulation touch, but that on the contrary there should be perfect freedom in the use of the pencil in taking out or modifying a blemish or altering an expression. I always desire to believe that there is more virtue in the intention of the artist than in any peculiar means he may use to express it. Such touches may be very well now and again, when they suit the blemishes, but I think it a folly to lay down a regulation touch as the sole and only manner in which artistic work should be carried out unless they order the blemishes, etc., to be made to suit them. If portrait painters adopted such a method as this, what a fine show our National Portrait Gallery would present? We, however, humbly, should follow the example of our betters, even if at a very respectful distance—it will always do us good. I fail to see that any artistic feeling is possible in "regulation" work, except it be accidental, but assuredly there is no common sense. I would submit this point for your consideration. If a blemish be of some particular shape, why should we cover it with a tissue of marks of a different shape? The shape and quality of a touch should be entirely governed by the shape and quality of the blemish; neither should our touch, however free from mannerism, be too positive and defined, as this will tend to destroy the quality of the skin (as is the case in the mechanical touches before referred to), and I may say that in my humble opinion the skin is a very important factor in any portrait. Regulation touches will give you what is called texture, or grain, but they will not give skin; and the point to be considered is, do we prefer texture, or do we prefer skin? In the prevailing methods of working negatives little attention, if any, is paid to this matter—no thought, no brains. All heads are touched in the same way; strong men, weak men, old ladies and young ones, and even children, are all treated alike—there is only one skin on top, and all must have it, be it natural or not. Now, this system of smoothing—for it is nothing else—is so generally adopted that there is no very distinctive difference between the work turned out by our first-class London houses, at enormous prices, and the moderate-priced work of our falsely designated "second rate" country photographers. Is it wise that that this should be so?

Let us examine this smoothing-up process for a moment, and see what a foolish

thing it really is. Delicate detail, fine modeling, artistic light and shade, are all difficult qualities for the operator to secure, and yet the retoucher is allowed to quietly sweep them away, and for what purpose? Simply to gain that polished surface which is so dear to him, and which with so many passes as the acme of good retouching. See if there be any life in the faces; are they not cold, hard, and in most instances expressionless and uninteresting? I think, however, you will find that there are many who yet consider them very good work, notwithstanding the fact that nothing short of a most impressionable imagination will be able to trace in them the least resemblance to the originals. Of course, we can always assure ourselves that it is a certain portrait by examining the watch-chain, the neck-tie, or some other article by which the identity can be established and so the face can be done without. But is this as it should be? I think it may safely be said that ladies are more susceptible to undue flattery than are men. That being conceded, it is only fair to say that when men are open to flattery they will go to a considerable distance to secure a record; in fact, I know examples that would make us all blush for our sex. In my own experience the complete alteration of a nose is but an ordinary affair, but I have also had to improve the symmetry of a gentleman's back, when increasing weight and years had somewhat marred his former beauty. But we will pass these over as the exceptions that prove how sensible we ourselves would be? What we ought really to consider is, should we not be more judicious in our flattery, and use greater skill and thought in carrying it out? I feel sure that if a better standard of opinion were established on this point an all-round good would result, alike to the retoucher, the photographer and the general public. One would not so often see, and hear it said (unfortunately with a very large degree of justice) that the best likeness of Mr. or Mrs. So-and-so was taken by an amateur friend, in his back garden—the only apparent reason being that, although the portrait is much worse from a purely photographic point than those taken by professionals, it has not been retouched. Examples of this kind crop up almost daily; I find very often that when a death occurs, in nine out of ten cases, amateur photographs are sent to me for copying or enlargement in preference to the ordinary studio picture, on the ground that "it is such a good likeness," although the negative is in all other respects a very bad one. Experience—and I have had a fair share of it—has always been full of object lessons, and I have always tried to gain instruction from them as I have struggled along, and I am just as open and willing to learn some point this evening as I was twenty-five or more years ago. Believe me, we should all live and learn, and I hope it may be long before any of us cease to do either. The moment we cease to learn and hope to improve, retrogression sets in, and we may rest assured that conceit, that most objectionable of qualities, will soon take firm hold of the victim, and ruin his or her future.

If my objections to the fallacy of regulation methods of retouching as popularly laid down, be true as regards their application to professional portraiture, how much more so must they be when applied to amateur work and to other branches of the art-science? Amateur work, taken under all conditions of light and in the face of many difficulties, should never be treated by the retoucher as within the same narrow limits which may be more or less sufficient for professional studio work, a fact which I have no doubt you have all observed.

How much more truly must all this apply when we attack the other branches of photography, such as landscape and architectural work. Retouching can be very largely employed in these interesting branches, and here again the healthy and untrammelled use of one's brains comes in with even greater advantage. To remove blemishes is but an item in the work we do; often it is possible to add an effect of light or shade which is not in the negative, or to emphasize an effect which although indicated is not powerful enough to assert itself. It is only during the past few years that I have been called upon to treat architectural and such kindred subjects. At first I scarcely knew what to do with them, unless I found an unhealthy lot of blemishes staring me in the face, but I at once reflected and realized that the subject was well worth studying up. I therefore started buying engravings, of which I have now many hundreds, and from them learned how to make a picture of interest of a

photograph almost devoid of beauty—with ample technical detail, but no artistic balance of light and shade. With engravings before one, taken from the best points of view—inside and out—of the various edifices noted for their beauty and grandeur, one can find ample food for reflection and a chance for some good work. The originals of these engravings were not only sketched from the best points of view, but they were finished by such giants in the handling of light and shade as William Henry Bartlett, Allom, Roberts and Prout, and they are invested with all the beauties of that artistic balance of which these artists were such rare masters. The photographs one has to treat may probably have been taken from the same, or nearly the same, standpoint, but how about the artistic effects of light and shade? The enthusiastic and artistic photographer must have full credit, both for knowledge and artistic feeling, but be these qualities ever so great he cannot command the light to his wishes and can only take the view as the light will let him. This is no fault of his, for struggle as he may he cannot get what he originally hoped for, and must be content with whatever image he may secure on his plate. Now is the time when we as retouchers can second his efforts and help him to procure those effects which he had hoped for, but found impossible to secure. By washes of color, papering the back of the negative, stumping in lights, etc., etc., we help him to score a success. This should really be considered as part of our art, and the student should pursue it still further for instruction, as I do, by making a study or a hobby of restoring engravings and mezzotints. I promise you, you will find such work most enjoyable, as well as instructive. Working in this way one naturally trains the eye until one acquires a most sensitive feeling for artistic beauty which will be invaluable to us, to say nothing whatever of the attendant pleasures of the occupation.

I have often wondered why amateurs, and especially ladies, of artistic taste, have not gone in for retouching more seriously than they have done. I cannot think that it is owing to the little difficulties which beset the path of the beginner. No. I think it is more traceable to the fact that the teachings on this interesting subject are such as to shut out the artistic opportunities which alone would induce the better class of amateurs to undertake the trouble of learning. I know cases of ladies who have so-called beautiful photographs, and who have yet declared that they had not a likeness of themselves which they would leave to their family. There is a lot of money waiting for the amateur or professional photographer who would supply this want—a good photograph and a good likeness. Another question worth pondering over is: Can a bad likeness be looked upon as a good photograph? A discussion on this point might result in a real benefit to our photographic portraiture as represented by the photography of the day.

At the conclusion of his paper, Mr. Barrett invited the members present to submit prints to him for friendly criticism, with a view to some understanding being arrived at upon the question as to what is good retouching, but there being no response, he continued:

Let us take as examples the portraits of the fathers of photography, upon the walls of this room. The majority of them were, no doubt, taken in the days of more or less untouched negatives, but I do not think the Society would care to have them replaced by photographs in the present style. Surely a medium between present-day work and the old style would be a much safer line to work upon than the one plan of continual smoothing. Some years ago I saw a 15 x 12 group of a lady and gentleman and a child, taken by a leading photographer, all the faces having the same touch; I did not consider that good—certainly it was not thoughtful, for there should have been differences in the texture of all three. I have found that the negative itself holds a certain impression of the real skin, *i. e.*, that there is the texture of real skin in the negative, if we in retouching do not make our touches so vivid and aggressive as to destroy it. I can retouch a good many large heads in a day, but I could not do so if I did not make use of the negative itself; and where the negative prints fairly white I do not encumber it with much retouching. I think, too, that in retouching a great deal of attention should be given to the improvement of expression. It very frequently happens that a sitter gets an unfortunate expression quite unlike that which is natural to him, but the slightest possible amount of work on the negative is

sufficient to remove it and to produce a pleasant and natural likeness, and it can be done by anyone who will take the trouble to think. The people who learn retouching are not sufficiently taught the importance of training themselves to think; they are taught to *do*, but there is really very little to do—most of it is *thinking*—thinking how very little pencil will make a successful picture.

The President agreed that the great objection to modern retouching arose from the fact that so little thought was devoted to the work. In using a wax head for making experiments in lighting he got something approximating to the appearance of the highly retouched portraits exposed for sale in shop windows, a result quite unlike skin and devoid of expression. Another cause of the unsatisfactory nature of retouched photographs was that the retoucher gave his idea of what the face ought to be, rather than what it actually was, and this was almost unavoidable unless he had an opportunity of studying the original.

Mr. Barrett continued, answering one or two questions which were interjected in the course of his remarks: The beauty of every head consists in its expression, and more success is gained by attention to that detail than by working up what is called a beautiful finish. I think ladies would be much better pleased with their photographs if their expression were properly rendered, with, perhaps, a reasonable amount of flattery, than with portraits in which everything is carefully smoothed out for the sake of "finish." Youth can be partially restored without burlesquing the original. There are certain faces that will admit of flattery without losing the likeness, but there are others which will not stand it without becoming grotesque and unpleasant to those who know the sitter. The medium which should be aimed at is the point which will produce a successful portrait and at the same time a pleasing likeness. It can only be arrived at by limiting the amount of work as much as possible, for the more pencil you put on the negative the more likely are you to lose the likeness. The degree of hardness of the pencil employed depends largely upon the peculiar touch of the user. Personally, I prefer a No. 3 lead, a very safe pencil, with which almost anything can be done. With a hard pencil there is a tendency to increase the quantity of work, and, consequently, to overdo it. With a No. 4 it will perhaps be necessary to make two strokes to produce the effect of one stroke with No. 3, and with No. 5 three or four strokes may be required, and that is dangerous; but one delicate touch with No. 3 will give the full amount of deposit and obviate the risk of over-working. A good method is always to take out the major blemishes first. It will be found that the blemishes occur, as it were, in series or rows. Take out the glaring ones first, and then the second row will appear to be pretty bad. Take those out next, and you will find that very little remains to be done. Do not continue touching and touching the negative until it will take no more lead, but be satisfied when the blemishes are gone. If the negative is to be printed on a high surfaced paper, the touch should be finer and softer than when platinum prints are required. I can retouch a large head for artistic effect in platinum printing in a very short space of time, but quite double would be necessary for silver printing. Freckles present no difficulty, and may be looked upon as the front row of blemishes, and as a guide for the rest of the work. The object in removing a blemish should be to destroy its shape, not to fill it up, which is ruinous to the photograph, because by filling it up you produce white and thereby loss of color, a quality most essential to a good picture. Where the pencil touches the negative for the first time the deposit should be greatest, and, from that point to the finish of the touch, it should become lighter, so that the end of the touch is simply the little bit that knits the work together. The severity of the expression of a man's face can always be softened, but the retoucher need not go so far as to put a laugh on the face of a man who never smiles. Ability and beauty do not always go together, and the retoucher should not take the brains out of a man of great ability, leaving him nothing to show his claims to be above the average. Where a man is the possessor of considerable ability, there are always indications of it in his face, yet he may have no pretensions whatever to beauty. Now, in trying to make such a man beautiful, or even good-looking, we will surely deprive him of his undoubted ability, and fail in producing a good portrait. The late Mr. Gladstone was an example of what I mean. What would his

portrait be without the wrinkles? Half the people who learn retouching are not taught to think. I invariably make my pupils think for the first six lessons, and then they can almost do for themselves. There never has been a portrait negative so perfect that a small amount of retouching will not improve it, and the great object should be to know when to leave off. Nature has color to help her, but photography has only black and white, and if a line is too harsh or too cold a very small amount of modification, as in the lines under the eyes, will often be of material assistance in reproducing the effect of Nature upon the eye of the observer. The necessity for retouching arises primarily from the fact that the color of the skin is made up of minute particles of different colors so blended that to our eyes they appear to be one color natural to the skin, but in the photograph there is a differentiation between them which it is necessary to some extent to remove. The removal is done by means of retouching to the necessary extent, and that is not very far. A mistake is often made in retouching the shadow side of a face, making it appear full, perhaps, while the lighted side is thin and sunken. It should be remembered that the slightest touch on the shadow side has twice the importance it would have on the other side, and that all the well-indicated features should be kept. For publication work, over-retouching is more acceptable, because people buy photographs of actresses and professional beauties simply because they are pretty, and not because they are good likenesses, but with well-known public men and men of learning and intellect, flattery is ruinous, because we really want likenesses of them, and do not care whether the portraits are pretty or not. The question of retouching landscape and architectural photographs brings in some different considerations. I think the printing in of a sky or a foreground is quite justifiable, but here again there is not sufficient thought exercised. How often do we see a sky that does not approximate to the effect of the water in the foreground, or that does not coincide with the lighting of the landscape. But there are frequently points in a landscape where a deepened shadow would add a value, or where the infusion of transparency would materially benefit the picture. This sort of work cannot be so well done by the pencil as by a stump or a brush, for the touch of a pencil is antagonistic to somewhat broad effects, and it must therefore be accomplished by washes of color, or by papering the back and using the stump where required. The same remarks apply generally to architectural work, where the deepening of a shadow often relieves the rest of the picture, and more perfectly renders the idea of distance. I do not think that the insertion of a line of a beam in a roof, for instance, would catch the eye more than would be the case if the actual beam had been photographed, providing the work was properly done, and I think it would be justifiable to give the effect of a ray of sunlight coming through a window, or any other natural effect, that could have been secured in the negative by patient waiting or under certain conditions. In architectural work, as in landscape, breadth of light and shade is the object in view, and, therefore, a wash of color is more satisfactory than the pencil, which is better adapted to the rendering of minute detail.



MRS. F. E. COLWELL.

JUST as the BULLETIN goes to press, we learn of the sudden death of Mrs. Colwell, wife of Mr. Fred. E. Colwell, who for several years carried on a photographic supply business in Utica, and who lately established himself in Albany. Mrs. Colwell had been more or less of an invalid for several years past, but her death was entirely unexpected, and was preceded by an illness of only two hours' duration. Her life was one of active helpfulness to all about her, and her loss will be deeply felt in the community in which she lived. Mr. Colwell may be sure of the sincere sympathy of his many friends in his sad bereavement.

SOCIETIES



THE Chattanooga (Tenn.) Camera Club held its regular quarterly meeting on June 21st, and elected the following officers: Frank Leach, President; F. B. Dickinson, Vice-President; George W. Thompson, Secretary and Treasurer. This club was organized only a few months ago, and in that short time has about doubled its membership. It is in a flourishing condition, and will shortly move into larger quarters.

THE members of the Y. M. C. A. of Dayton, Ohio, have recently organized a Camera Club, and have elected the following officers: John Street, President; Oscar von Englen, Vice-President, and Bert Blum, Secretary-Treasurer. An annual exhibition of the work of the Club will be held, and awards for merit in different classes of work will be given.

THE Cape Ann Photographic Club of Gloucester, Mass., held a meeting on June 23d and elected the following officers: Robert Herne, President; Dr. Percy C. Procter, Vice-President; Mrs. E. S. Curtis, Secretary-Treasurer.

THE annual meeting of the New England Lantern Slide Exchange was held on June 16th in the rooms of the Providence Camera Club. Slides representing the best work of the various clubs were shown, and were all of a high order, those of the Valley Camera Club being remarkably good. F. J. Chatterton of New Haven was elected Secretary of the exchange for the coming year.

THE Photographic Society of Philadelphia and the Pennsylvania Academy of Fine Arts will hold the second annual exhibition from October 22d to November 19th. This exhibition will be of great artistic interest, and will include a representative showing of the best work being done abroad.

THE New York Society of Amateur Photographers are to celebrate the first year of their organization by giving a photographic print exhibition the week beginning October 3d, at their rooms in the Thomas Jefferson Building, Brooklyn. It is intended to make this exhibit very interesting, and several social entertainments will be

given during the week. The committee is formed of Mr. L. L. Young, Chairman; W. H. Weygandt, A. C. Blancke and Howard Carter. Amateur photographers in Greater New York are cordially invited to attend.

A NEW camera club was recently organized in Newark, N. J. The headquarters of the club are at 185 Market street, and the following officers have been elected: Robert N. Thompson, President; Wm. H. Broadwell, Vice-President; J. A. Vanderhof, Treasurer; F. Keim, Secretary. Membership fees have been set at a nominal figure, and applications will be welcomed by the Secretary, Fred Keim, Newark post office. No name has yet been decided upon, but it is probable that it will be "The Essex Amateur Camera Club."



UNDER the title, DESCRIPTIVE CATALOGUE AND PRICE LIST OF PHOTOGRAPHIC APPARATUS MANUFACTURED BY E. & H. T. ANTHONY & Co., and bearing date of July, 1899, our publishers have just issued their list of goods for the professional photographer in a very complete and attractive style. The entire catalogue has been most carefully revised and entirely reset from new type. The various lines of apparatus are classified and indexed in such a way as to make it an easy matter to find any particular thing listed, at a moment's glance. It contains one hundred and sixty-six pages of matter, and is probably the most complete catalogue of photographic goods published. Copies will be mailed upon application.

NATURALISTIC PHOTOGRAPHY, by Dr. P. H. Emerson, published by the Scovill & Adams Company, is the third edition of this work, which has been thoroughly revised, much enlarged and in parts rewritten for American readers. It contains more than five hundred pages of valuable and interesting photographic matter, and is handsomely bound in canvas (board covers), with gold lettering and original side stamp. Dr. Emerson has been long and well known as an authority in photographic literature, and this latest edition of his work will not fail to find a wide field of usefulness. It is

published at a price of \$3.50, and may be obtained through our publishers.

NEW POINTERS FOR AMATEURS is the name of a very handy little pocket notebook, published by George E. Mellen, which will be useful to the beginner. It contains suggestions and information on a large number of photographic topics, and treats of the practical side of questions that are constantly bothering the young worker. In it are also to be found exposure tables and blank pages for records of exposures and memoranda. Price, 15 cents. For sale by our publishers

WE have received the sixth edition of Dr. E. Vogel's *Taschenbuch der Praktischen Photographie*, published by Gustav Schmidt, 1899. An excellent little work for beginners, as well as the more advanced amateur, containing a good deal of valuable knowledge, we recommend it with pleasure to our German-speaking friends and lovers of the photographic art.

H. A. HYATT'S ILLUSTRATED CATALOG OF PHOTOGRAPHIC SUPPLIES, No. 102, is before us, and is very complete and attractive in its get-up, consisting of nearly one hundred pages of matter, covering everything photographic. The catalogue is well printed and handsomely bound.

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PHOTOGRAPH BY J. E. GIFFIN.

SIMPLICITY.

A CONVENTION PRIZE-WINNER.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

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No. 10.

HIGHER PRICES.

A GREAT many addresses have been made during the past year before photographic conventions, and bodies of photographic workers, by prominent, practical, business photographers, and many opinions have been passed which have reached our editorial ears. It is interesting and instructive, to say nothing of being extremely encouraging, to note the consensus of opinion with reference to the possibility and practicability of a higher standard of prices throughout the country. The opinion has been almost uniformly expressed that better prices are not only possible, but that they are imperative to the prosperity of the fraternity, and to a great extent it seems to be a fact that the photographer holds his future in his own hands. By this it is not intended that medium quality work, and even poorer, shall be forced upon the patrons of our photographic studios at a price beyond its value, but that there is in the conditions governing almost every studio in the country a possibility of producing work of a higher class than has heretofore been done, for which a higher price should be demanded. The human tendency is to desire something better than the past has afforded, and if the patron who has been paying from \$3 to \$5 for a certain grade of work, is shown something at double the price which is distinctly different, and the good qualities of which can honestly be advertised and exploited, there will be excited in his mind the desire to obtain the newer and the better work, and while it may not be possible for the photographer to make a sale at first and he may have to be contented with taking an order at the old rates for the old work, he will, if a good salesman, have planted in the mind of his customer, seed which will ripen at a later day. There are doubtless many galleries in the country where the steps will have to be taken gradually, but we believe there is not one in which the effort, if prop-

erly made, will not be successful to a very great degree. In this way the taste of the community will be very greatly advanced, and the movement, if taken up by photographers in general, cannot but result in a degree of education that will be apparent on the sales book.

The men who advocate better prices and a better quality of work are the successful men in the fraternity, and they recommend them because they have tried the experiment and know that it succeeds, and while the degree of improvement may differ greatly in various places the result is bound to be an upward one and a paying one. In this connection the work of a specialist, as has already been alluded to in the BULLETIN, will be found of great advantage, and the man who has the ability to make a specially good thing in some certain line, is he who can create an appetite among his customers for it, and who can afford to put a good price upon the work he does. First, last and always, however, let the aim be to make the work worth its added value.

OBITUARY.

IT is with deep regret that we announce the death of Prof. W. K. Burton, which occurred at the Imperial University Hospital, Tokio, Japan, on Saturday, August 5th, at 9.15 o'clock, P. M. Prof. Burton has long been a prominent figure in photographic literature and investigation, and his contributions to the science are voluminous and valuable. He had been ill for several months, but, from the last reports that reached us, seemed to be improving. The announcement of his death came as a shock, and his loss will be keenly felt by his wide circle of friends and admirers.

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Mr. JAMES M. ELLIOTT, of Columbus, Ohio, the oldest and one of the most prominent photographers of that city, died on Sunday, September 10th, at the age of 57 years. Mr. Elliott was a prominent member of the G. A. R., and an active worker in all movements for the advancement of the community in which he lived. His death will be a personal loss to many.

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THE death is reported of Mr. Albert Pollock, of Deadwood, S. D., who established in that city in 1877 the first photographic gallery opened in the Black Hills.

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Mr. M. V. GANTT, a well-known photographer of Richmond, Va., died September 5th, at the age of 59 years. Mr. Gantt had been in the employ of Mr. C. O. Campbell for thirty years, during which time he has done much to develop photography in the South.

Items of Interest



IT is stated that the *Shamrock* is equipped with a complete photographic outfit of English make, and that it is the purpose of the owner to send all exposures made to England for development. May he carry with him a goodly supply of negatives, and as much else as may be honestly due the good boat.

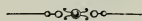
It is announced that a new and specially constructed telescope is being prepared for Harvard University, which will probably be installed during the coming year. The principal points of interest in connection with this instrument consist in the fact that the aperture is to be only from 12 to 14 inches, but that the focal length will be from 135 to 162 feet, which will give an extremely large image of the object photographed. It is figured that negatives of the moon made through this instrument will be more than 1 foot in diameter. Its importance in the scientific world can easily be estimated.

A. P. WEAVER, of New Orleans, is the inventor of a new arrangement for kite photography which he calls a telephotoaerograph, embodying many new principles, and of which he expects great things. The camera is elevated by means of kites, and may be operated by the electrician in charge, even to the point of controlling the angle of view to be photographed. Mr. Weaver has not patented his machine, but offers it to the government for use in connection with the military and naval branches of its work.

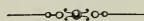
THE fourth annual salon and exhibition of amateur photography by the Cleveland Camera Club is announced to be held at the Case Library from November 20 to December 2. The pictures entered will be catalogued, and the judges will be selected for their artistic and photographic ability. The awards will consist of certificates for superior excellence only.

ASTRONOMICAL photography has just demonstrated by means of the enormous telescope at the Lick Observatory that the North star, 253,000,000,000 miles distant, is not one but three stars, swinging about in orbits like the moon, earth and sun. It is reported that this same telescope has been the means of discovering, in all, fourteen multiple stars which until lately had all been believed to be single. In the case of the

latest discovery, that of the North star above alluded to, the triplet is estimated as shooting towards the earth at a velocity of 16 miles per second, two of the suns of which revolve about each other every four days, and swing around the central planet about every third day.



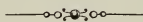
At the recent convention of the Photographic Association of Missouri, held in St. Louis, the grand prize was awarded to J. Ed. Rösch, of St. Louis, honorable mention being awarded to George H. Van Norman, of Springfield, Mass., and Pirie MacDonald, of Albany, N. Y. Mr. F. W. Guerin, of St. Louis, captured the first prize in the genre class, the second prize going to Mr. A. S. Robertson. Competition in the grand prize class was open to the world, and in the genre class to the United States. The convention of 1900 will be held in Kansas City.



It is announced that *Leslie's Weekly* is about to offer cash prizes for the best work of amateur photographers, the same to be published from time to time and the competition to be based upon originality of subject and perfection of the photograph. Full information regarding this contest will be obtainable by addressing *Leslie's Weekly*, New York.



THE BULLETIN would acknowledge with thanks the invitation to be present at the opening exercises of the National Export Exposition, under the auspices of the Philadelphia Exposition Association, held on the 14th of September. Press of editorial work made it impossible for us to attend.



THE Fifth Annual Exhibition of the Montreal Camera Club is announced to take place from the 21st to the 25th of November. Three open classes and a number of members' classes are outlined, full particulars concerning which may be had by addressing the Secretary, Mr. A. Clarence Lyman, 157 St. James street, Montreal.



A SERIES of cash prizes is offered by the passenger department of the Burlington and Missouri Railroad for good photographs of farm buildings and views of a like nature, which will be judged by a committee consisting of Mr. F. A. Rinehart, Mr. C. N. Hobart, both well-known photographers of Omaha, and Mr. J. Francis, of the Burlington and Missouri Railroad. Full information can be obtained by addressing Mr. Francis, General Passenger Agent, Omaha, Neb.



THE Ninth Annual Convention of the Photographers' Association of Ohio, which closed on the first of September, was held at the Hotel Victory, Put-in-Bay, and was largely attended by an enthusiastic body of photographers. One of the principal questions that came under discussion was the advantage of forming a tri-State organization, to be

composed of three divisions, each State competing in exhibits separately, with one grand prize for all. Plans were made to carry this suggestion into operation, with a view to include Ohio, Indiana and Michigan. The officers elected for the following year were as follows : President, C. L. Lewis, of Toledo ; First Vice-President, C. S. Bateham, of Norwalk ; Second Vice-President, R. W. Mathews, of Piqua ; Secretary, A. L. Bowersox, of Dayton, and Treasurer, W. L. Smith, of St. Marys. The next Convention will be held at the Hotel Victory. The first prize in the grand portrait class was awarded to I. Benjamin, of Cincinnati, and in the genre class to A. L. Bowersox, of Dayton. In the special class for professional photographers outside the State of Ohio, the first prize went to George H. Van Norman, Springfield, Mass. ; second, to Pirie MacDonald, Albany, N. Y., and the third to E. D. Spellman, Detroit, Mich. A special diploma was awarded to George F. Tingley, of Mystic, Conn., for his remarkably fine sheep study.



THE INTERNATIONAL CONGRESSES OF THE EXPOSITION OF 1900—CONGRESS OF PHOTOGRAPHY.

THE following communication from the Director of Education and Social Economy of the United States Commission to the Paris Exposition of 1900, will be of interest.—[EDRS.]

An international congress of photography will be held, under the patronage of the French Government, in the series of official congresses of the Exposition of 1900. The sessions will open on Monday, the 23d of July, in one of the halls of the Palais des Congres, and will last until the afternoon of Saturday, the 28th. For membership, it is sufficient to have paid the subscription fee of 10 francs ; this gives a right to be present at the meetings of the Congress, and to take part in the visits which are to be prepared by the organizing committee. The members may also present communications, and will receive the printed volume of proceedings.

This Congress is to continue the work of the two previous international congresses, held at Paris in 1889, and at Brussels in 1891. It will examine the practical side of the resolutions adopted on those occasions, with a view to improving and perfecting them in the light of experience. Decisions will also be taken in regard to various new questions which have since arisen. There will be public sessions, as well as the general and section meetings, some of which will be devoted to practical work. There are also to be lectures and organized visits to scientific and industrial establishments.

Specialists are particularly requested to communicate to the Committee their observations on questions which should be submitted to the consideration of the Congress. The members of photographic societies and the editors of scientific journals are invited to make known as widely as possible the details concerning the Congress. All communications should be addressed to the Secretary-General, M. S. Pector, 9 rue Lincoln, Paris.

PRESIDENT G. W. CURTISS TO THE PHOTOGRAPHERS' ASSOCIATION OF MISSOURI.

IN his opening address before the Convention of the Photographers Association of Missouri, August 22d, President Curtiss said in part:

"In my eventful career as a photographer I have been called upon several times to furnish something in the way of an article that would, from my standpoint, serve to uplift photography to the dignity it deserves as a profession; and I have tried nearly all the subjects, from the technical workings of the art, to the inspiring bursts that were prompted solely by sentiment and a love of art for art's sake; but each in its turn seemed to me as flat as an overtuned plate, and I made a resolve that if I ever attempted a photographic item again, it would be on a subject easily recognized as being of equal value to the man who occupies the highest round on the ladder of photographic success or to the little fellow that makes tintypes in a tent.

"In making the President's address before this Convention, it will not be my purpose to take up a single moment that is not intended to point out to you some of the conditions that will have to be met before the followers of this clan can ever rise to the level that is properly theirs, and while I distinctly desire to impress upon you that these remarks are simply my opinion, I feel that I have the proof to substantiate my position, and I can only say that there is but one characteristic that seems to fit all classes in this business, and that is professional jealousy. I honestly believe that this is the keynote of the cause that withholds our vocation from rising to the heights it should occupy.

"I have been prompted to choose this subject, mainly for the reason that it is yet to be my privilege to find an instance in other professions where there is not a code of ethics that places a man of ability in his proper sphere, and which is equally severe on the men who deserve little or no recognition. Among the doctors, the man of the most prominence is the oftenest quoted, and where is there a lawyer who is not proud to honor his fellow-practitioner, whose ability has carried him high in his position among men? This leads me directly into my subject. Just how much good it will do to bring up this question I am not prepared to say, but I sincerely hope that if it is not productive of anything else, it will, at least, be sufficient to keep this Convention in activity until the closing session.

"I make the bold statement that there has never been a time in the history of photography when there was so much necessity for concerted action as there is now, and if there ever was a better opportunity to test the value of a photographic association than there is at this present moment, I have never heard of it. But before anything can be accomplished, it will be absolutely necessary for all of us to unite in the common cause of doing something to secure better public recognition.

"It is all very well to say that by attending to our own affairs we can command the respect due us, but the man who works as an

individual wields only an individual's influence. It therefore, appears to me that the only way to gain the proper strength is to unite in the one mighty ambition that what helps one helps all. And once more I am led back to my subject, jealousy and its influence against the rise of photography to its proper station. I wish to present a few questions for your consideration, with a view of doing my share toward correcting an evil that is sucking the life blood out of our profession.

"As a rule, we are not envious of a man who does not come into direct competition with us, and we can praise the work of one who does not sell it. For example, who was ever jealous of Charles Heatherington, and who has ever been more original or more ambitious to create a high standard in photographic work? (A voice, "Hurrah for Charley.") But I question what our estimate of him would have been if his work were placed on the market with a price attached to it.

"It has been my fortune to know on terms of intimacy some of the men in this business who have made for themselves national reputations, and I have seen the work of these same men that justifies the assurance that they have won their laurels honestly and from pure ability. I have also seen the work of these gentlemen riddled full of holes with criticisms from men whose only excuse was that they would like to get a chance to show the world what they could do, if they could only get hold of the subjects that these fortunate fellows had to work with. I will confess I have made the same excuse myself, and then I considered that perhaps there might be some particular reason why I did not get them, but let me say to you that I have since had subjects as good as ever faced a lens, and I do not hesitate to say that I do not wonder at my jealousy after looking over my own results.

"But what do you find in the men in this line who have risen to prominence, aside from their actual ability to make negatives? I will tell you. You will not fail to see in them the liberality of broad-gauged men, with a good word for everybody, and if they have any views regarding the condition of the little fellows, it is but an honest interest to do something that will make photographers, as a class, better men, and their calling a source of pride. And yet we are envious of these very same men, who really have done more to improve our condition, and who have created a standard of work that only an ambitious man dare hope to equal. And yet we get our little hammers, and join in a discordant chorus of knockers, and howl that it is a perfect shame that the public should be allowed to pay \$25 for a dozen photographs that we cannot sell for \$3. But how many of us would refuse \$25 for a dozen cabinets if we could get it? I'll tell you right now that I would not. We are only jealous that it can be done by some one else, and we also forget that every time he does it he is doing an act that makes your business a better one and places a value on your work, if it is good, that you should get more money for than you do. But I can assure you of one thing, you will never be regarded any higher than the estimate you place on yourself.

"I never supposed it to be possible for me to be able to sell cabinet photographs for \$5 each until I tried it, but I was jealous of a fel-

low that I had heard of who was doing it, and I determined to attempt it. I will be honest with you. I have not had to hire any extra men, or work nights to supply the demand at this figure, but I will admit to you that I have disposed of enough of them to surprise even myself. The only anxiety I now have is to make them worth the price, and I am told that there is only one man in this business in my town that has not called me everything from a pirate to a chicken thief for doing it. Some of my patrons have said that they were jealous of me, but I am convinced that every one of the men who object to it would see a better future for photography if he would only try higher prices for his work.

"I am sure that this condition exists in every town I ever visited, and so thoroughly sure am I that this is photography's greatest evil, that I would like to relate an experience which happened to me early this year, which bears directly on what photographers think of each other. I visited one of the largest cities in this country, with a view of satisfying myself with what was being done in this line by men who have the advantages of a large population to draw from. I called upon the owner of every studio in that town, and without mentioning myself as being in this line of work, I asked for specimens and prices. I was very much surprised to find every gallery in that town advertising the one I knew to be the best man there, by offering to make pictures for me at \$10 a dozen, which Mr. So and So was getting \$18 for. Without a single exception, his name was mentioned and his prices were the standard of value that regulated the worth of every photograph made in his vicinity. I purposely delayed calling upon him until I had seen all the rest. I soon discovered the secret of his success. In the first place, his work was worth all he asked for it. In his studio I found the only one that showed real evidence of prosperity, and in him I met the only man in the town that had nothing to say about business being dull and that photography was not good enough for him. I fully realize the length to which this subject can be carried, and there are many things that could be quoted to make my views more firm, but I feel that where the wrong exists we ought to consider more the remedy than the evil itself. It, therefore, comes right down to the question, what are we going to do about it? And the answer rests with you. I would offer as a suggestion, however, that the only means to accomplish the desired result will be through every member of this association making it his special duty to co-operate with the rest of us in making the photographers of this country see the necessity of placing their own interests on a higher plane."



THE INTERNATIONAL ANNUAL OF ANTHONY'S PHOTOGRAPHIC BULLETIN is rapidly approaching completion, and the coming volume, No. XII, will be full of interesting and valuable matter, and will contain a large collection of fine half-tone and other illustrations, and publishers predict that it will be better this year than ever before.

ADDRESS BY PROFESSOR A. H. GRIFFITH BEFORE THE ARISTO SCHOOL OF PHOTOGRAPHY AT THE CELORON CONVENTION.

AFTER a few introductory remarks, Professor Griffith said, in part:

"Pictures and portraits." That covers a wide range. The successful picture, or the failure, begins the moment that the man or woman or child comes into your reception-room. I know the most of you think it begins when they go before the camera. That is not true. I know all of us, in our busy, every-day life here in America, do things quickly. It is not so in Germany. There a man will take his family, go to a beer garden, and order a schoppen all round, and sit there and sip—you know there is always a lid on those German schoppens to keep the flies out, because it takes a lot of time! He will listen to the music, and sit and talk, and his schoppen of beer will last him the entire evening. The American rushes in, treats all round and rushes out again. The same haste prevails in our business life. The American rushes into the photographic studio and asks how much his photos will cost, and wants his pictures taken in a hurry. It is hard to attempt high art under such conditions; and if you meet him in the same spirit, I think the idea will never be reached. The thing is to first become acquainted with him yourself, and, when he comes into the door, if he is in a hurry, get him to stop a moment and talk about something. Don't let him talk of the commercial side the first thing, the financial side, because, if by any accident he has had his mind made up that the pictures will cost him \$2.50, and he finds the charge will be \$5, allow me to tell you that that look of disappointment that comes into his face will not leave; it will go into the negative, and your picture will not be a great success. Or, if you attempt to argue with him as to the relative merits of this position or that position, and how he looks best, you will have the very same difficulty. I know it is easy enough on my part to give advice; it is easy enough to stand off and say that you should do so and so, and so and so; and on your part you may say that you cannot take the time to follow out all the little details necessary in the line I have mentioned, because you can only get so much for the pictures. But now let me tell you a story of the stage that will illustrate that. There was in one of the companies that I was connected with, a man by the name of Frank Rose, a good-looking, well-dressed young fellow, who played parts miserably. He was a sort of all-round man, useful to fill in with when we were short on any part. I remember once at a rehearsal, when Rose was going through his part, there was present old McKean Buchanan, who was a fine actor of the old school, and who was filling, with his daughter Virginia, a two weeks' engagement. Rose, as I was saying, was rehearsing his part after his usual manner before these two actors. The play was "Hamlet," and Rose was cast as one of the minor characters, who, in the scene on the battlement, stops the Ghost. He went through his lines, not very well. McKean, in his lordly way, said: "What's your name?" "Rose." "Mr. Rose, will you do that over again?" Rose went through the lines again, possibly in a little bit better fashion, but still not very well. "Now," said Buchanan, "Mr. Rose, let me do that for you," and he stopped the Ghost, appealing to him in the name of high heaven and low earth, and the people on it, to stop! It was the difference between night and day. "Now," he said, "Mr. Rose, do it like that." Mr. Rose made another effort, and, while it was a great improvement over that which he did before, because of the magnificent example set for him, yet McKean Buchanan was not satisfied, and he said in his coarse, brutal way, which he could assume when he wished to, "Damned if I believe you can do it at all!" Rose for the first time showed the animal nature that was in him, because he was usually very gentle, and said, "Mr. Buchanan, I don't get \$200 a night." "How much do you get?" said Buchanan. "Twelve dollars a week and my expenses." "Do it any way you d—n please. It is good enough."

Now, I am not talking to you people when you are making \$2 pictures; you must

make \$2 pictures, because the people demand them. A man said to me this morning: "You gave me an object-lesson, and I realized that it was true. I went back home, and the pictures which I made after you had made that point so plain to me were of a better character than ever before in my life, but the people did not think so." It is necessary, however, first to have people educated up to this standard, and this gentleman stated that, although he was sure his pictures were better, yet he could not make the public realize it. And finally one of his customers came to him and told him that she was going to have her pictures taken by a competitor of his, because that competitor always made all the faces look white. And he told me he had to go back to making white faces. That, then, is one thing you must bear in mind, that you must educate the people upon whose patronage you exist. If you are satisfied with the \$2 class, don't complain of hard times.

Every man, every woman and every child that comes into your gallery you must make a careful study of; you must make a great picture of them; and every little while the subject will come in that will give you a glorious opportunity, that will prove a stepping-stone by means of which to educate your people to better things.

I would aim first to get the confidence of my sitter, my patron. Throw aside all thoughts of money. Try to get that person's confidence. Ask him to sit down, saying, "Well, now, let me see; how is your family, your daughters, how are they getting along?" I would ask him about his crops, or his grocery, or what calico he was selling; talk to him about anything that seemed of interest to him, to get him out of himself; then, when he was in a good humor, when his face beamed all over, when he had forgotten for the moment all his worldly cares, get him before the camera and take him as he is; watch the positions he assumes until you have the natural attitude, and then grasp the opportunity. That man will go away and say, "That man knows how to take pictures."

Let me tell you the story of two clerks in a store, one strictly a business man who never had a moment to think of the cares of any other person among all the people that came into his store; the other, a young man not particularly versed in business ways, but of a kindly spirit, and a warm heart, and friendly feeling for every one that came in. Hardly a customer came into that store for whom he didn't have some word of greeting, expressing some thought that was kin to his customer's thought, asking "when he left the farm, when did you come into town? how are all the people out there, people I met Sunday at dinner, and that young fellow—what is his name—who came in there and you introduced me to him?" Every old farmer that came around that store wanted this young man to wait on him; they forgot all about the other man. This second young man was an ideal clerk; the other was a hard, grasping business man who, when he gets old, his nose will be pinched and thin, and his fingers will clinch the dollar tight. The money side is the side to look for, because we have to do that to keep the wagon going; but if you have no heart, your pictures will sink to the level of mechanical work. You may say that it is all mechanical. I look through the camera; I see how my sitter is posed; I put in the plate and expose it for a certain length of time, and then develop it and make prints from it; it is all mechanical. Not so. The greatest singer that America has ever known, Adelina Patti, had a sister, Carlotta Patti, who possessed a wonderful voice, away beyond that of Adelina. She was a master of technique in tone; she had mastered the music of all the masters; but her sister had that wonderful magnetism, that genius, that art that sways the house and carries the people with her away from their cares, so that the people collected until they could not get into the door to hear that woman sing. Why? Because she appealed to their hearts and taught them the better side of life. When she sang, the song welled right from the heart to the hearts of the people, while Carlotta sang into a nameless grave, great musician as she was. We must look at the art side of photography as above that of mechanical skill. With all your ideas of chemistry, you will fail if you neglect the art side. Yet photography has a mechanical side, which must not be neglected; and the like is true of the mechanical side of the art. You must work with the best mechanical means, best modern appliances, provide for everything which our needs require.

I every once in a while go through a gallery and look at the pictures, and get the big head sometimes when I see that the people have followed out some plan that I gave. We have a lot of students in the school, and we say to them, "You are all wrong, go that way!" and they all go over the fence, every last rascal of them. Not one of them stops on the top of the fence to survey the field and see what is before him. If you look at the pictures exhibited here to-day over at the hall you will find by an examination of those that show the best progress that the progress has been accomplished step by step. It has to be accomplished gradually.

I said to you that you ought to be sparing of white, but I never told you to have a whole lot of dirty, muddy shades. I don't believe that you will be able to recall a single sentence to that effect. I said, too, "Keep your shadows down, keep your details down, but have them." There is a Rembrandt which I might have brought to you here worth \$35,000, but I was afraid of railway trains and steamboats; I was afraid to ask the man to let me bring it. If I could have brought that picture before you, you would have realized that Rembrandt's shades were full of detail, yet full of luminous light, but kept down, so that his faces are the parts of his pictures that speak out to you; he never makes a muddy shadow. That window that opened up into his father's mill gave him a ray of glorious golden sunlight, but it flooded the whole mill with its brown shades, with sunlight. That gave him detail; that gave him definition; yet he kept it subservient to the picture. So when you people make dark, muddy, ugly shadows, don't for a moment think they are artistic. Now, that is another item as to which I have been misunderstood. I have been urging the artistic side, and I do say yet—I don't like to call names, but there is a gentleman in this country who told me that he exposed thirty-eight plates, out of which he had got but one that he wanted, and then I looked over a dozen of the plates that he showed me. Many of them were of a higher quality so far as the technical side is concerned, the chemical side, the development side, of a much higher order than were those to which prizes were awarded. But that man is an artist, and was looking for the artistic side pure and simple. He had no thought for the technical side, the chemical side. His friend was nothing to him only as he could make of him an artistic picture. Now, artistic photography does not mean that. It means that you are to be artistic and at the same time you may be chemically perfect. You may be perfect on the development side; you may keep your shadows down, but full of luminous light, full of detail, not lost in a black mass. Steady, steady, steady. Oh, if I could only get the people to think, to know that it is the mind, the brain, behind the camera that makes the picture, although you are to use the best material that you can get. One painter takes a piece of canvas worth \$1.50, fixes it on a stretcher, 35 cents; uses \$2 worth of paint applied with a \$1 brush, and gets \$50 for the picture, while Whistler uses exactly the same amount of canvas, exactly the same amount of color, the same brushes, and gets \$1,000. He is paid for his brains. The material is the same. Therefore, get the best materials you can get hold of, but don't forget that you want definition and clearness, together with artistic thought. If I could get some of you people pulled back, not as far as you were when you started, but part way back—get you to start over again. I would have you put this collection of pictures opposite the collection of four years ago that you might see what marvelous things have been accomplished, both chemically and artistically, more directly artistically. You have run away from the chemical side a little bit. Now, go back to the chemical side, go back to the technical qualities, not neglecting the artistic, but remaining photographically correct as nearly as you can do it. [Applause.] Then people will not say you are on the wrong track.

I used the term paintings—told you to study painting. I know sometimes I have been criticized for that, and truly, too, because a man is apt at times to go to extremes. You know every man is a crank, or, if he is not a crank, he has not accomplished anything; a man must be crazy to do anything. There is an old potter I know that is as crazy as any man you have in the asylums of New York State, but he makes pottery. Great God! that man makes pottery, no two pieces alike. If there is such a thing as transmigration of souls, his is that of some old potter under whose deft fingers the clay was formed into shapes of beauty. This crazy potter is

a great egotist. He will tell you frankly that he makes the best pottery of any in the whole world. But he will laugh, "Wait till you see my next kiln; I will kill you with that." That is the right sort of egotism.

I was talking to a photographer the other day who told me that he had no competition in his town. I said, "Where do you live?" He named a town of 100,000 inhabitants. I said, "You have no competition?" "No," replied he. Four thousand conventions will never do that man any good. [Applause.] Nothing will do him any good. He is simply as high as he can get; he has arrived at a point where he cannot learn anything. But I admire the man who says, "I can make as good pictures as anybody in my territory, but just wait and see the next lot." That sort of egotism is the sort that will win.

Now, as to the matter of simplicity, I know I gave a cut at the background painters last year, and they don't like me very well, because I gave them a dig about their fussy backgrounds. I wanted them to paint better backgrounds, and they are painting better ones to-day; but the backgrounds we see in some galleries give one the shivers. You feel so fussy. It is like some rooms where the rocking chairs are set exactly square and one chair put over on that side, and another here, and the table is set exactly in the middle, and there is in the air all around you the feeling of "Don't touch me, stand here, stand here, keep quiet." And you go out of the place nervous and worn out, not having had a bit of rest. It is that way with some backgrounds. Simplicity, detailed simplicity, the same as in the study of the artistic. Study simplicity; keep the surroundings simple, and then you will win, because simplicity charms. You see a woman dressed in simple white; you don't remember anything else she wore. You say to some man that she was beautifully dressed. He asks, "In what?" You don't remember; she was dressed so simply, so chastely. But had the costume been outre, you could have described it. You take a woman with golden, fluffy hair, dressed in white, with a little touch of blue or pink at her throat, and put her before a piece of purple drapery, and see how she will sparkle like a pearl; that is the effect of simple dress. Now, copy this simplicity in your heart and in your mind, and don't forget to brush away everything that will in any way intrude, that you don't need. It is the same with color; it is the same with brushes. The man that accomplishes the desired effects with the fewest strokes is the man who is most successful.

Let us aim for simplicity in thought, expression, action. Somebody said to me, "Do you think the modern camera has done anything for the horseman?" Yes, it has taught us that when a horse is on a gallop, all four feet are off the ground at once. There never was an artist that ever drew a horse that way, because it is not artistic; but it is natural. Now, you try and catch people in their most natural moods, and still make them artistic. I know people will say you must go back to the old masters. True; I revere the "old masters," but there are some new masters coming up that will be revered in future years. Michael Angelo lamented the fact that people did not appreciate his work; they wanted old masters. He lived three hundred years ago, when they were looking back to the old masters. In the next hundred years we will be looked up to by somebody else. We will find new masters just as we now find the old masters.

I believe we move in cycles. We reach a certain stage of development, and then go down. There is no new thing under the sun only as we put our own character into it. In looking through these exhibits the other day I could pick out hundreds of pieces of work because I saw the owner's characters stamped in the pictures, just as one may know by the superscription on an envelope, by the hand writing, who was the writer. You will be better men and better photographers if you stamp character in your work. Every once in a while somebody comes along and hits you on a sore spot. Try the next time to not let him know where the sore spots are. Cover them over. I know I am not talking to you in a technical way but I like to make these things entertaining: and so I say, if your critic hits you on your sore shoulder let him hit you there again; and he will stop quarreling with a man who does not know when he is hurt.

This is the kind of work I like to do. At the same time I like to make it entertaining.

No man has a higher veneration than I have for Abraham Lincoln, because there was a man who, when burdened with a nation, in its most trying period, resting upon him, could stop at any moment and tell you a story, or enjoy a story, and "let go," and, as it were, forget all his burdens, and be ready to take a fresh grip with those sinewy hands of his, to throttle the difficulties that beset him. Now, don't get into ruts; pull yourself out of them. If you go into your studio some morning and find everything has gone wrong, and you have got up late, the eggs were boiled too hard, the ham was burned, and you quarrelled with your wife, and went away without kissing the baby, and everything is at sixes and sevens, just go out in the woods, let your appointments go until some other time, tell the people you are out of sorts and can't make pictures that day, and go away, and come back the next day carrying with you a little of the outdoor air and fragrance and some of the freedom of the woods, and you will go back better prepared for making pictures. (Applause.)

These talks are worth dollars to you; some say they cannot spare the money and time to attend conventions. It is worth money to come and look at this Convention, if nothing else. I argue that it will put money in your pocket for you to come here, get out of doors, get your thoughts away from your camera, your plates and bath. So when you have been out of sorts, and have gotten away, and had some recreation, when you go back you will commence anew, and make better pictures; you will tear out some parts of your gallery or put an addition here or there; you will put in new pictures, new hangings; in short, you will start all over, and you will soon wonder why you are making better pictures. (Here the speaker looked at his watch, and stated that he was five minutes ahead of time, but he would bring his remarks to a close. The cries from all over the house were heard, "Keep on, keep on.") I was afraid you might be getting tired. One other thing I was going to talk about. I have in my own thought once in a while gotten good pictures and when I did, it was because the thoughts of the subject shone forth in his face. As I once before said to you, they detect counterfeits now by the camera, and in no other way. They look through your body and detect the bones and muscles by the camera; and do you think for one moment that you do not likewise get a man's thoughts in your camera? Now be very careful, as I said to you at the beginning of this talk, to have your subjects filled with pleasant thoughts, ideas that give him pleasure. If it be a woman, and she delights in dress, talk to her about dress; get her pleased. If she is pleased with a ribbon, very well, let it be a ribbon you talk about. If it is a child, you must in some way enter into that child's life. At all times make photographs that the people want, that you may gather in the money from, so that you can pay a steady rent and all your other expenses. If you make an old man's picture, make him so grandly old that you see all his past life in his face, the noble life that he has led, of honesty and truthfulness, of fair and square dealing with his fellow men; so that his face beams with the mellow light of an honorable past, as he goes out into the great unknown, supported by faith and his own consciousness of a life well spent. If you make a picture of middle age, let his face show the consciousness of the maturity of his powers to cope with the world and win success. If you take a young man, let his face be so full of ambition, so full of the things he is going to do, of the difficulties he is going to conquer, of the victories he is going to win in this world, that all who look upon that face will feel that he is going to succeed, let circumstances be what they will. If you take the picture of an elderly woman, let it show the beauty of a grand old motherly face, reflecting her pride in the life she has lived, in the sons and daughters gathered about her, or who have gone out into the world to bless her, by grandchildren gathering about her. If you take a child's face, let it be so full of the guileless innocence, the careless thought of the future, of happy childhood, that whoever takes up that picture will involuntarily wish to press it to his lips. And then you will win. I thank you.

PICTORIAL PORTRAITURE.

BY FRANK M. SUTCLIFFE.

IN an article on pictorial portraiture in a late number of *The Amateur Photographer*, Mr. Sutcliffe touches upon several important points, and cannot but interest the portrait photographer of to-day, whether he be in England or America. Mr. Sutcliffe says, in part :

"When Mr. Crooke, in his presidential address to the Convention at Gloucester, said that 'one welcome addition for portraitists would be a lens that would in some respects resemble the Bergheim lens in diffusion of focus, but having sufficient depth to enable focusing to be done roughly, say, by measurement in the studio similar to that practised in outdoor snapshotting,' he re-echoed the wish of every portraitist throughout the world who feels that the moments wasted in focusing are too invaluable to be so spent. Every portrait photographer knows too well that in the space of time which elapses between the removal of the focusing-glass and the squeezing of the ball of the pneumatic shutter, while the focusing-screen is bent or pushed aside and the dark slide put into its place, the tap of the shutter turned off and the front of the slide drawn, the sitter is rapidly freezing, and will require bringing to life again before the exposure can be made.

"Whether it would be practicable to give up using the sitter as a 'focusing model' with our present lenses is doubtful. With full-length figures it is safe to focus on the surroundings of the sitter, and we often adopt this plan with babies. We put a footstool on the floor and focus on that, and when the baby comes in, put it in the same place. By noting the pattern on the carpet it is easy to snap the babe as it crawls near the right spot. By this means focusing is not needed, whereas if the baby is put into a chair, the picture, no matter how sharp, is an absurd one, for no mother in her senses would ever put a young baby into a chair and leave it there; she would be sure to put it on the floor, where it would be safe.

"Many photographers have during the past few years given up the use of their large cameras for hand cameras, and have found that with such instruments pictures can be secured which would be impossible with stand cameras. Many have wished that hand cameras could be used in the studio, and every photographer must have wished that he could secure in the twinkling of an eye those transitory expressions he notes on his sitters' faces when they are not under the eye of the camera. Unfortunately, all professional photographers know too well that sharp focusing is imperative. Not one sitter in a thousand will order from a negative which is only slightly out of focus, whether the want of definition is caused by inaccurate focusing or by the movement of the sitter, or want of register in the camera.

"Whenever such a proof is submitted, the remark that 'I must have moved in that one, so it may be thrown out,' is sure to follow. Many people even object to the texture of platinotype paper because it does not give such 'clear' prints as gelatine paper. As photographers, except those living in the centers of civilization, find it does not pay



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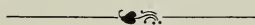
to break away from conventionalities, we fear Mr. Crooke's wish will not be gratified, for it would not pay an optician to design a new lens which he could not hope to sell to more than a dozen photographers throughout the world. It would be interesting to know how many of the higher-priced portrait lenses are sold. The price of many of these to us seemed so prohibitive that we imagine the opticians do not keep them, but have simply 'got 'em on the list.' To be asked £100 for a group lens is enough to make any photographer whistle and stand on his head with surprise.

"It is cheering to hear that such an experienced worker as the President of the late Convention has good hopes for the future of portrait photography. This means two things—that he hopes the public will patronize photographers who make pictorial portraits, and that there will be plenty of photographers capable of making pictures of their sitters. We have all heard that it is impossible for a leopard to change his spots, and we fear that the professional worker will not be able to make any other kind of portrait than those he has been making for the past forty years, even if he tries. Our hopes, then, rest on the coming generation of photographers. Are they preparing themselves for the coming change, or are they not?

"We venture to think it will be with photographic portraiture as it is with everything else ; individual effort will be powerless, and the photographer, who at present has not only to make pictorial portraits, but to develop them, varnish them, print them, wash them, mount them, send them out, and enter their delivery in his books, will be employed by a syndicate, and he will have nothing else to worry him but how to make the most of every sitter. At present few photographers have sufficient capital to develop the artistic side of their business. The photographer may lie awake all night planning improvements in his studio and devising tasteful ways of "setting" his wares, but when daylight comes he seldom finds enough money in his trousers' pockets to buy the raw materials with. Even the suggestion that the front shop should be done away with would not mean any saving of expense ; just the opposite, for in many cases there are many things, such as frames, artists' materials, etc., to say nothing of tobacco, which more than pay the rent. It is often thought to be *infra dig.* for a photographer to combine another trade with that of photographer, but those who do are wise in their generation, for their other trade gives them employment during the winter and spring. Happy the photographer who has more than one string to his bow ! If the shops were done away with it would, of course, mean less worry to the photographer and more time in summer for thinking about his proper work. His proper work ! What is that ? Making pictures of his sitters, of people he has never seen in his life before, and whom he will never see again. In fifteen minutes he and his sitter have to become acquainted ; he must make his sitter feel at home, no matter what his or her age may be, no matter whether he or she is all flesh or all nerves ; he must take that sitter's portrait when the sitter is not aware of it, and he must arrange the light so that the sitter looks his

best. The successful maker of pictorial portraits truly must find it difficult to know where to look for a school which will teach him all this.

"The possibilities of pictorial portraiture have not yet been more than trifled with; but to build a fitting place to work in, such a building, say, as Tennyson's palace of art, would cost thousands. A photographer should not be tied to work in one room and one light; he should have many rooms, bright and dull, where he could make such pictures as his mood felt imperative or as the dress or face of his sitter suggested—real rooms, with real seats in the windows, quite unlike the photographer's studio, full of shams."



THE TONING OF PLATINUM PRINTS AND INTENSIFICATION OF PRINTING-OUT PAPERS.

BY RAIMUND RAPP.

THE best intensifier for platinum pictures, which, however, has to be mixed immediately before use, is prepared according to the following formula:

Gallic acid solution (cold saturated).....	50 cubic centimeters.
Nitrate of silver solution 1 : 10.....	2 " "
Glacial acetic acid.....	10 to 20 drops.
Water	50 cubic centimeters.

The intensification is not a chemical one, but is based upon the physical deposit of the metallic silver precipitate secreted by the gallic acid. If the print is of sufficient strength, it is put in water acidified with acetic acid, which is changed two or three times, and, by treatment with the following platinum bath, the silver deposit passes into metallic platinum:

Phosphoric acid.....	15 cubic centimeters.
Potassium chloride of platinum.....	1 gram.
Water ...	600 cubic centimeters.

It is then washed. Platinum prints toned in this way are black. By treatment with different toning baths in place of the platinum it is, however, possible to produce platinum prints in almost all colors. The color tones are pronounced. The tones to be obtained are brown, reddish, green, blue, sepia, and almost all intermediate shades. If the intensified platinum print is put into very diluted uranium intensifier, it will tone from a deep brown to a light red. At the moment the desired tone is obtained, the toning is interrupted by simple washing (twenty to thirty minutes). Green tones are obtained by treatment of a uranium-toned print with a 25 per cent. sulphate of iron solution, in which the print remains until the required color is reached. If the green print is put in water which is acidified with a little muriatic acid, the same will become intensely blue (Berlin blue). Blue and green

tones can also be produced in another way, but they are not so pronounced in color as the above-described ones. The following solutions are combined :

Red prussiate of potash solution, 1 : 50.....	20	cubic centimeters.
Citrate ammonia oxide of iron solution, 1 : 50....	10	“ “
Nitrate of uranium solution, 1 : 50.....	10	“ “
Glacial acetic acid.....	10	“ “
Water.....	50	“ “

The platinum prints, intensified with gallic acid, will assume a green coloration in this solution. Continued washing will change the prints into blue. A handsome deep blue tone is obtained with the following gold bath, in which the prints are left for several hours :

Fifteen grams nitrate of lead are dissolved in 1 liter of water, and 40 grams ammonium sulphocyanide solution are added, filtered, and then 20 cubic centimeters chloride of gold solution 1 : 50 are added. The prints are then washed for one hour.

The color of a simply intensified platinum print is brown to violet. The prints should always be treated subsequently with one of the toning baths mentioned, because the metallic silver picture may easily cause spots by having come in contact with the fingers. But even simply intensified prints are durable, if carefully made.

The intensifier mentioned in the beginning can also be applied to silver prints. Analogous to the principle of silver intensification after development in the wet collodion process, the nascent silver in the intensifying solution will deposit upon the picture. While the platinum prints, to be intensified, have to possess fine tones, no matter how dilute, to become not too hard in the intensification, silver prints may be toned without fear of this. The silver particles will deposit on all parts which were photo-chemically changed, even so faintly that they are not visible to the eye, by the silver secretion. The light impression need not be so strong as to be observable to the eye by the blackening, if only the first step of light-sensitiveness was passed over by the light intensity. If all the invisible fine tones in the high lights of a faintly printed silver picture were not previously changed chemically, such a print could not be developed physically.

The prints may already have been toned and fixed, and will still obtain the necessary strength by intensification. The deposited silver picture can afterwards be treated further with gold and toning baths. The intensifier remains clear after continued use, and discolours very slowly.

Translated by

HENRY DIETRICH.



All copy for November issue must be in our hands not later than October 15th.

INTENSIFICATION WITH SILVER SALTS.

By J. Joë.

INTENSIFICATION of the negative with bichloride of mercury has been in general use only since the introduction of the dry plate. In the wet, or collodion, process it was much simpler to intensify the silver picture by the further deposit of metallic silver, formed from nitrate of silver. The reason for not applying silver intensification in the dry-plate process is owing to the use of gelatine. While in the collodion process the metallic silver picture to be intensified is above and free, and the intensification silver particles, following a physical power of attraction, can come in direct contact with it, in the gelatine dry-plate process the silver grain of the metallic picture is surrounded by gelatine, and a direct contact can follow only conditionally, namely, when the silver grain produced by intensification, is formed in the immediate neighborhood of the existing silver. If the intensification silver grain has already been formed, perhaps upon the film or in it, but not directly on the silver picture, then successful intensification is not possible, and the negative will be spoiled by a dense silver fog. It is evident, that under these circumstances a silver intensification process for dry plates, as applied in the collodion process, would not be successful.

The matter is essentially different and more favorable, if the condition for the formation of the intensification can be obtained directly on the silver picture by application of suitable solutions and treatment. This is possible by bringing the silver precipitate of the picture into a form, in which it assimilates nitrate of silver and reduces the latter to metallic silver, so that the intensification silver is formed in contact with the silver picture precipitate.

This method is the bromo-silver-printing intensification, which, if I am not mistaken, was published first by Liesegang. The manipulation is as follows :

The fixed and washed negative is immersed in a mixture of

Sulphate of copper.....	8 grams.
Bromide of potassium.....	4 “
Water	100 cubic centimeters.

The picture bleaches in this solution with formation of bromide of silver (and copper bromide), so that it appears as a positive. It is now washed and treated with an acid solution of 100 parts of water and 5 parts nitrate of silver.

In this bath the negative will gradually assume its original condition, only the tone will appear a little more brown, a proof that an addition of silver, another modification, has taken place. If washed again and treated with a 20 per cent. sulphide of ammonia solution, the precipitate will become black again.

As the changing action takes place only between the compound which formed and the nitrate of silver, a covering of the shadows and such parts of the negative which originally contained no silver, is im-

possible, and the intensification is, theoretically and practically, a correct and proportional one.

But the metal of the silver picture may also have a reducing action by itself, and is thereby capable of attracting metal from a solution containing silver in suitable form, whereby intensification is possible. As the formation of the intensification silver can take place here only in contact with the silver already present, the methods based hereupon are theoretically correct, and in their practical application always successful. With these methods only a solution containing silver is applied, which, from the fact that the silver separates from the solution in metallic form without further after-treatment, results in an ideal intensification method. Such a method was mentioned years ago for intensifying line productions upon gelatine plates. A mixture of nitrate of silver, ammonium sulpho-cyanide, fixing soda and water were applied, which was to have the desired effect. It appears, however, that this has not been the case, and the method was therefore improved by adding to the solution a reducing medium made up of

<i>A.</i> —Nitrate of silver.....	8 grams.
Distilled water	100 cubic centimeters.
<i>B.</i> —Ammonium sulphocyanide.....	15 grams.
Hyposulphite of soda.....	15 “
Water.....	100 cubic centimeters.

Of solution *B* add to solution *A* until the precipitate has dissolved. Add now a little pyro developer and bromide of potassium solution, and with this treat the plate. If only a moderate intensification is desired, dilute the solution with 2 to 3 parts of water. After 5 to 7 minutes the intensification is finished, and the plate is laid for a few minutes in a fixing bath; and is then washed.

As ammonium sulpho-cyanide attacks the gelatine, it is advisable, to harden the film beforehand. This is not necessary, if an alum fixing bath is used. As the intensifying solution contains hyposulphite of soda, it is not necessary, to wash the film before intensification.

This method has been for some time subject to different modifications, but all are based upon the same principle.

Balagny recommends the following method :

To a 5 per cent. solution of nitrate of silver add, drop by drop, a 25 per cent. solution of sulphite of soda. As soon as the precipitate, which at first forms, has dissolved again, the liquid is ready for use. The well-washed negative is treated with the bath, which bleaches the negative, after which it is treated with a pyro or hydrochinone developer.

Farmer's process recommends hyposulphite of silver as an intensification agent. The solution for this intensifier is composed as follows :

<i>A.</i> —Nitrate of silver.....	10 parts.
Distilled water.....	100 “
<i>B.</i> —Bromide of potassium.....	40 parts.
Water	100 “

A and *B* are mixed, and the bromide of silver so obtained is washed and dissolved in hyposulphite of soda solution 1 : 3. Ten parts of

water are added to the solution. The negative is treated with this solution, dried, and is then treated with an oxalate developer.

In place of the oxalate developer the following can also be applied:

Pyro.....	¼ gram.
Silver solution.....	3½ cubic centimeters.
Water.....	60 " "

Before use add 2 cubic centimeters of ammonia.

As may easily be comprehended, the hyposulphite of silver used for intensification is formed from the bromide of silver. This leads to the idea, that it is not necessary to produce this silver artificially at first, but to take it simply from the fixing bath, in which it is in sufficient quantity. This brings us further to the thought of applying a stronger fixing bath by addition of a reducing medium as intensifier. As peculiar as this may appear, the same idea was considered several years ago, and at that time the fixing and intensifying were executed in one operation.

For this purpose a suitable reducing medium, sulphate of iron and ammonia, was added to the simple fixing bath in the following proportion:

<i>A.</i> —Hyposulphite of soda.....	1 part.
Water.....	3 parts.
<i>B.</i> —Sulphate of iron and ammonia.....	1 part.
Water.....	3 parts

A and *B* are mixed.

As mentioned at the beginning of this article, an ordinary silver solution mixed with a reducing medium, is not particularly suitable for intensification, still, it is recommended quite often. To prevent a fogging of the shadows, it has lately been recommended, to harden the film beforehand with chrome alum. The intensification, it is said, will then build up on the silver particles deposited on the surface of the film, which may be possible, but is uncertain.

The solutions used for this method are:

HARDENING BATH.

Chrome alum.....	5 grams.
Nitric acid.....	2 drops.
Water.....	100 cubic centimeters.

INTENSIFYING SOLUTION.

<i>A.</i> —Gallic acid.....	16 grams.
Water.....	100 cubic centimeters.
<i>B.</i> —Nitrate of silver.....	2 grams.
Water.....	100 cubic centimeters.

Equal parts of *A* and *B* are mixed and diluted with 30 parts of water, and the negative is then laid into the solution, where it is left until it appears to be sufficiently strong.

A good silver intensification is to be preferred to any other method, as it is done with the same material of which the picture consists. Its printing quality is also improved.

Translated by

HENRY DIETRICH.

THE REDUCED SILVER THEORY OF THE DEVELOPABLE PHOTOGRAPHIC IMAGE.

By MAJOR-GENERAL J. WATERHOUSE, I. S. C., in "PHOTOGRAPHY."

IN No. 1 of the new *Archiv für Wissenschaftliche Photographie*, Dr. R. Abegg gave his reasons for supporting the theory that the latent developable photographic image is formed of metallic silver, and not of a sub-haloid.

First of all, he found that by treating an exposed gelatino-bromide plate with a dilute nitric acid at 1:15 the developable image was almost destroyed, and argues that if the image were formed of the sub-haloid, this would not be the case, while it is perfectly intelligible on the assumption that the image is formed of metallic silver.

He then goes on to cite various authorities in support of his view. First, Dr. Eder, who showed, in 1880, that an unexposed plate treated with a developing solution, and in contact with pure silver wire, shows a developed image in the parts in contact with the wire.

From this he argues that even under the sub-haloid theory, as soon as the sub-haloid formed by the action of light has been reduced to silver by the developer, any further strengthening of the image must be brought about by the formation of reduced silver, and this strengthening is in itself a proof of his theory.

Experiments of Captain Abney's are then quoted as strongly pointing in the same direction; for instance, a negative coated with unexposed emulsion can be intensified by development. Reduction of the silver bromide takes place in the vicinity of the silver particles of the original negative. In another case, an image was developed in an unexposed film which had been coated upon an exposed, but undeveloped, plate.

Then, again, on the basis of some observations of Guebhardt, he considers the ripening of gelatine emulsion to be due to the formation of free silver by the chemical action of the gelatine.

The development of an image after fixing, he also considers due to the presence of free silver nuclei formed during exposure, and not removed by fixing.

In the May number of the *Photographische Correspondenz*, Dr. Eder shows that, so far from the developable image being destroyed by nitric acid, a bromized collodion plate may be sensitized in a bath of silver nitrate containing as much as 5 parts of strong nitric acid to 3 parts of water, and yet give a faint image with a glycin developer after the silver and acid had been washed off. With a bath containing nitric acid in the proportion of 1:15 water (the same proportion as used by Dr. Abegg), an excellent dense negative was obtained. Similar results were obtained with an iron developer. In the case of the strong acid bath, the proportion of nitric acid present was enough to immediately dissolve any free silver present, and the results show very clearly that nitric acid does not destroy the developable image, which, whatever else it may be, cannot possibly be metallic silver. On all grounds he defends and upholds the sub-haloid theory.

In the June number of the *Correspondenz*, Dr. Eder goes into the question of the effect of the direct contact of the silver bromide with the metallic silver separated out by reduction in the developer in strengthening the developable image formed by light. He undertook some new experiments on the behavior of unexposed silver bromide in contact with pure silver wire in a ferrous oxalate developer, but found that his former observations were not confirmed, and that no reduction took place at the points of contact, so long as strong mechanical pressure was avoided, nor was there any propagation of reduction from the silver wire by action of the developer on unexposed silver bromide. This result confirms him all the more strongly in the opinion that the primary impression by light may be referred to the formation of sub-bromide by liberation of bromine from the insolated silver bromide, and that the experimental evidence, so far brought forward by Dr. Abegg in support of the metallic silver nucleus theory, is insufficient and inconclusive.

Before this last paper of Dr. Eder's came into my hands, I had made some experiments on the effect of the contact of metallic silver on pure silver bromide, as well as on gelatine dry plates, when treated with a developer, which may be of interest in connection with this discussion.

Some finely divided metallic silver was prepared by precipitating a solution of silver nitrate with metol. This gives a very fine, brilliant deposit, which must be fairly pure, after a thorough washing, and could probably be made almost perfectly so by treatment with sulphuric acid after heating to redness, and finally thoroughly washing out all of the acid.

The first thing to ascertain was, whether a definite compound of the nature of a sub-bromide could be formed by triturating together some of this finely divided metallic silver, with pure silver bromide slightly in excess. The mixture at once took a dark, gray color, and seemed to be homogeneous. The brilliant particles of silver were no longer distinct. On testing a portion with strong nitric acid, the bromide became quite yellow, while some silver dissolved out, and gave a white precipitate of chloride with hydrochloric acid. Apparently, no sub-bromide could have been formed, or only very little.

The mixture was then further ground up, and appeared more in gray metallic scales, much darker than at first. A portion was exposed to bright sunlight for a minute or two, and then tested with nitric acid as before. There was not much change of color, nor any clear separation of yellow bromide, though a few grains were visible, and a quantity of dark olive green material remained undissolved. Hydrochloric acid at once gave a precipitate, as before, with the solution.

Some of the same mixture was then taken and treated with an ordinary fixing solution of hyposulphite of soda, without exposure to light. The scales slowly dissolved without any change of color. There was a little final residue of a gray flocculent character, probably silver, but very different from the original bright silver dust.

This experiment was tried again after exposure of the mixed silver

and bromide to light. The ultimate result was very much the same, but it was noticed that some of the silver separated out and floated on the surface of the solution.

Other experiments were tried after the mixture had been made up several days, and again well ground up, but in all cases nitric acid dissolved out some free silver.

The formation of any definite compound of a subhaloid nature in this way seems, therefore, very doubtful, except as a result of the grinding on the pure bromide, but it would require testing by careful weighing of the amount of silver added and dissolved out again, and the resources of a chemical laboratory which are not at my command.

By way of comparison, a portion of the same silver bromide, without any admixture of metallic silver, was taken and exposed to bright sunlight for a few minutes. It did not very readily darken, and took a greenish olive color, but not so dark as when mixed with the silver. On treatment with strong nitric acid, some unaltered bromide showed out yellow, but the rest retained its color nearly unchanged. There was no trace of precipitate of silver chloride on adding dilute hydrochloric acid, as before, so that apparently no metallic silver could have been separated out by the action of light, or, if there was any, it must have been rehalogenized by the nitric acid.

Another series of experiments was made to ascertain the action of metallic silver in contact with exposed and unexposed gelatine dry plates during development.

An imperial 'ordinary' plate was taken and half exposed to weak diffused light. Some of the reduced silver powder was brushed over both halves, so as to make a fine, bright, polished surface. The plate was then developed with eikonogen and soda. There was no sign of any reduction of the bromide in either half of the film caused by the metallic silver, which was still bright on the surface, and was easily washed off, leaving no perceptible trace of its presence.

In another experiment the ends of an Ilford "Ordinary" plate were brushed over in the same way with the silver powder, and then one end was exposed to light while the other was protected. The plate was then developed with ferrous oxalate, and during development pieces of clean, pure metallic silver plate and wire were laid on the film. There was again no trace of any action caused by the metallic powder. The presence of the wire on the film seemed to be only traceable by a very fine dark line on the unexposed side (but it is doubtful whether this was not a scratch); writing with a silver wire also showed in dark lines, but writing with a smooth ebonite pencil case did not show at all. On the exposed side some writing with a lead pencil done before exposure came up comparatively clear; so did the image of the wire laid on the plate, and also in part the piece of silver plate quite clear at the points of contact, but it shaded off according to the bending of the plate. The writing with a silver wire came up in fine dark lines, but there was no sign of the writing done with the ebonite pencil case. (In another experiment, which gave similar results as to silver plates and wires in contact, the ebonite writing

came out clear on the exposed side, and dark on the unexposed side, as did the writing and some scraping with silver wire.)

Further experiments were tried with silver plates and silver leaf pressed into contact with wetted gelatine plates, exposed and unexposed, and developed in ferrous oxalate and eikonogen, but in no case was there any sign of reduction of the silver haloid surface by contact with the metallic silver.

In his *Chemistry of Photography* (pages 174 and 182), Professor Meldola, in order to show the reducing action of nascent silver upon the silver bromide with which it is in contact, describes an experiment of the kind in which fine precipitated silver is rolled into a wet gelatine film, and then developed, with the result that the film is found covered with a number of dark spots, where the silver has been in contact with the film. He explains it on the ground that each metallic particle acts as one element of a galvanic couple, and reduces the bromide with which it is in contact, the results being the dark spots dotted over the plate.

I therefore tried the experiment over again with some silver filings, which were rolled in on a wet film, as described. With ferrous oxalate development the result was not very clear, but with eikonogen and soda it was so, though the spots were not very dense, and there was very little propagation of reduction. In this case the friction of rolling may have brought about the result.

In order to make still more sure of it, I took some of the silver reduced with metol, well washed, but still in a moist state, and poured a little of this on an Ilford "Ordinary" plate, and developed in eikonogen. There was then a very distinct brownish stain of reduction in the part covered by the silver, densest where there was most silver. With a rapid plate (Gem "Meteor") exactly the same result was obtained, and perhaps more distinctly.

Under Professor Meldola's explanation, the cause of the difference between the results of my later and my earlier experiments would appear to be that in the cases where the metallic silver was not well embedded in the gelatine, it formed only, as it were, a single electrolytic cell of low potential, not sufficient to bring about the decomposition of the film, but when a very large number of very fine particles were drawn into the substance of the film they formed a powerful series of cells of sufficiently high potential to bring about the reduction. This requires to be proved.

A repetition of the same experiments with other samples of pure precipitated silver has given me similar results, and shows, I think, fairly conclusively that mere contact of silver with the surface of a gelatine dry plate will not bring about reduction by development of the sensitive surface, whether it has been exposed to light or not, and in the former case may prevent development. When, however, the silver is applied moist and sufficiently finely divided to be drawn into the substance of the gelatine, reduction may take place, but less readily on an exposed surface than on an unexposed.

The next step was to ascertain in the same way the effect of the

contact of silver bromide that had been exposed to light, and might be assumed to be similar to the ordinary reduction product of the action of light on a dry plate, and to show on development in contact with a dry plate film some visible sign of propagation of reduction, but, strange to say, the result was exactly the reverse. In nearly all cases the spots covered with exposed bromide, or pieces of exposed films, etc., developed clearer than the other parts of the plate, which were slightly fogged under the prolonged action of the developer.

The experiment was repeated in various ways with pure silver bromide, in powder, exposed to light, and placed on dry plate films, both in a dry and moist state, with pieces of exposed film laid over unexposed films, and *vice versa*, but only in the case of some pieces of Wellington negative paper, one exposed and one unexposed and developed in contact, did I get any trace of a transferred reducing action on the unexposed film. This result also requires further examination.

These results certainly seem to be directly contrary to what one would expect under the ordinary sub-haloid theory, and to some extent to favor Dr. Abegg's views, but they cannot be taken as conclusive. They show that silver in a state of exceedingly fine division can produce reduction in the film of an ordinary dry plate. but, considering the quantity of silver powder that was supplied to the surface of the plates in my last experiments, and the very slight reduction that took place in the film on development, I cannot look upon this result as in any way confirming Dr. Abegg's theory that the substance of the invisible developable image is metallic silver.

On the other hand, the results with the exposed bromide show that mere contact of the reduction product with an unexposed dry plate film will not produce reduction in a developing solution.

A fourth series of experiments was made to see the effect of nitric acid on the developable image on a gelatine dry plate.

A "Gem" plate was exposed on a view. One-half of the plate was then brushed over with dilute nitric acid at 1:15, and well washed off after a few seconds. The plate was then developed with ferrous oxalate developer. The image generally was rather weak and over-exposed, but, curiously enough, the part treated with the acid was denser than the other, apparently by the retarding action of the acid on the over-exposed plate. That this was the case, was afterwards proved by producing the same result on an over-exposed Ilford plate, half of which was brushed over with a 10 per cent. solution of nitric acid before development.

In other experiments tried with normal or insufficient exposures on Ilford "Ordinary" plates, they all showed reduction of density on the part treated by the acid. One plate treated with a 10 per cent. solution showed a very strong reduction of density as compared with the untreated half, but still a fairly strong and detailed image was there, and might probably have been made denser by still further prolonging the development. The untreated half was very over-dense.

These experiments show that, unless plates are very much over-exposed, nitric acid certainly has a very retarding, if not entirely de-

structive, effect. Its action seems to be of a rehalogenizing nature, by liberating halogen from the exposed surface. In some cases this can be recognized by the odor. I have also observed it with pure silver iodide treated with nitric acid after exposure.

Professor Meldola has pointed out (*op. cit.*, page 206) that nitric acid is among the reagents which destroy the latent image, and that it probably acts in the way I have stated above from the result of observation.

Dr. Abegg lays great stress on the permanence of the image left in gelatine dry plates after fixing, which he also seems to think consists of free metallic silver. This subject has been very fully investigated by Mr. J. Sterry (*Phot. Journal*, xxii, page 264), who found, as I have also done, that an exposed film of gelatine and silver nitrate alone will give a developable image after fixing and thorough washing. The presence of free metallic silver in this case seems doubtful. We know that organic compounds of silver with albumen, gelatine, etc., can be formed which resist the action of hyposulphite of soda after exposure to light, and it is, no doubt, owing to the organic gelatino-silver haloid compounds present in an ordinary gelatine dry plate that it owes its superior sensitiveness over collodion and other dry plates in which the organic element is not so fully developed. It is the presence of these little known organic silver compounds in the gelatine dry plate, together with the leathery structure of the gelatine itself, which complicates the question of the action of light upon these plates, and makes them more or less unsuitable as standards in photochemical investigations on silver haloids, however useful they may be as indicators. Then, again, with most commercial plates the actual composition of the plate is unknown, and so one works more or less in the dark. From this point of view, my experiments, though interesting, cannot claim to be conclusive, and require further support from other methods, which I hope I may be able to supply later on.

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

ACID hyposulphite of soda has lately been introduced into market by A. Lumiere & Sons, free from water, and is recommended for fixing. The salt has the advantages, that it dissolves very rapidly in water, that only half the quantity of ordinary hyposulphite is used, the bath does not color brown, and that it hardens the plates very easily. The bath is made in the proportion of 8 : 100.

Dr. A. Miethe has been appointed to the chair at the Berlin Technical High School, made vacant by the death of Dr. H. W. Vogel. Dr. Miethe is well known to the photographic fraternity. For some time he has been director of Voigtlander's Optical Institute in Brunswick, and he is also the editor of the "*Atelier des Photographen*," one of the best known monthly photographic journals in Germany. A better

selection for this important position could not have been made, and we congratulate Dr. Miethe upon his appointment and the institution upon having secured his services.

Nitrate of copper for the production of positive pictures can be used in the same way as other metal salts. The paper to be used is first coated uniformly with a solution of

Arrow-root	10 grams
Water	500 cubic centimeters.

When dry the paper is left floating, with the prepared side down (in the darkroom), upon the following solution :

Nitrate of uranium.....	5 grams.
Nitrate of copper.....	2 “
Water.....	60 cubic centimeters.

and is then dried in the dark. The printing is continued, until a weak picture, similar to the image in platinum printing, is visible, where-upon the paper is treated with a developer, consisting of

Ferricyanide of potassium.....	3 grams.
Water.....	60 cubic centimeters.

A picture of a chocolate brown color is obtained. The fixing is done in pure water.

The Behavior of Spectrum and Pigment Colors by Modification of the Light Producing Them.—If the light serving for the production of a strong spectrum picture is gradually reduced, the actual position of the colors seems to change; they centralize more, and the finer shades disappear, leaving, in a short while, only a spectrum of red, green and violet. At further reduction of the light, the spectrum colors appear brownish red, a weak green and a weak violet. If the light is still further reduced, a reddish brown and a pale green is obtained, and finally only a faint green remains.

To restore albumen prints that have become yellow, they are soaked in warm water, put on a glass plate, face down, and the back is cleaned with a sponge. They are then bleached in the following bath:

Bichromate of potassium.....	30 grams.
Chloride of sodium.....	30 “
Muriatic acid.....	1.5 “
Water	1,000 cubic centimeters.

After thorough bleaching, wash carefully and develop with hydrochinone, with which a black picture tone is obtained.

The intensification of platinum pictures with gallic acid is not unimportant, because it is effective in giving strength to a good many weak prints. The process is as follows: Fifty cubic centimeters of a cold saturated gallic acid solution are diluted with the same quantity of water, 10 drops glacial acetic acid are added, and finally 2 grams nitrate of silver solution 1:10 are added. The wet platinum prints are put at once into this solution, and left therein until the necessary intensification has been effected. The developer will gradually become cloudy. But this is of no account, because at this stage the intensifica-

tion will have proceeded sufficiently far. As soon as the desired strength is obtained, fix in water slightly acidified with acetic acid, which should be changed two or three times. The intensified picture has a reddish color, but it can be toned black by putting it into a platinum bath of the following composition:

Potassium chloride of platinum.....	1 grain.
Phosphoric acid.....	15 cubic centimeters.
Water.....	600 " "

In this bath the picture will become black. Very much under-exposed pictures cannot be treated in this way, but only delicate and rich platinum prints. With old prints the process is rather slow.

Translated by

HENRY DIETRICH.



PROTOTYPY.

By C. FLECK.

UNDER the name of prototypy, I understand a half-tone grain process, in which the half-tones undergo a formation into grain by development and partly by subsequent etching. A zinc plate is dusted in the dusting-box with light-sensitive asphaltum, or guaiacum resin powder, in exactly the same way as is usually done for photo-engraving purposes. In place of the light-sensitive resin, any other not sensitive resin may be applied, if it is combined with a light-sensitive salt. Potassium or ammonium bichromate is dissolved in glue ammonia water and resin in alcohol. The mixture of both solutions is distilled, and the residue is powdered. To prevent a soapy condition, very little ammonia only should be added. The dusted plate must show an extremely dense, but very fine grain. The plate must be dense, so as not to brighten the shadows too much during etching, and fine in grain to reproduce not only the half-tones, but also the middle-tones correctly. The grain is melted on to the plate, and the original negative is laid upon the dusted plate for printing, and is put into the printing frame. The printing time is extended, until it is presumed that the resin grain has been affected by light in its deepest shadows in such a way, that it remains unchanged during development. If a reproduction is to be made, care should be taken that the shadows of the negative are as glassy as possible, just as with the

autotype negative, as otherwise gray shadows will be obtained. If a Lichtdruck negative should be applied, whose shadows are over-worked by long exposure, twice and three times the usual exposure would have to be given for printing the shadows. Much depends upon the kind of resin or resin salts combination. The developing solutions differ too, of course. While by application of asphaltum dust, oil of turpentine is applied, for developing for guaiacum resin, spirits of turpentine should be used. A great advantage in printing of the prototype is, that an over-printing is impossible, the shadows having an open grain from beginning, which will never print wide nor close. The same may be said for the printing time of the middle tones. If the shadows were not sufficiently printed, the middle tones would be lost. After developing and washing, the plate is heated and retouched. If type is on the plate, or shadows, which are to print completely black, they have to be covered by retouching. The progressive etching and covering of the tones is analogous to the autotype etching. The plate can be rubbed in with magnesia after each etching, without fearing that the tender grain will suffer. After four to five etchings a sample print is made, and after this the grain intaglio etching is done, whereupon the plate may be given to the routing man. The prototype plates should not form any square printing points, as the highest lights would be without grain. By correctly governed development, the grain will gradually diminish in vignette shape in the highest lights.

The prototype process has the following advantages:

1. There is no necessity of a clear line screen.
2. An artificial as well as incorrect cutting up of the half-tone picture is excluded.
3. Neither pigment paper nor enamel solution are required.
4. As this method can be applied upon zinc, copper is not required.
5. The etching process is more certain and easier than in the heliotype process, and
6. No fear is to be had of any stars in etching.

In conclusion, it may be said that the prototype method is between Lichtdruck and photogravure. It embodies the advantages of both processes, without incurring the expenses of either.

Translated by

HENRY DIETRICH.

FROM reports of experiments which are being made in kite photography in all parts of the country it seems likely that very important developments may be expected at no distant day. A number of people are working on the problem, and much is being accomplished. It is very probable that the aerial photograph will prove an important aid to naval and military reconnoissance in the future.



WE are in receipt, from the author, of a copy of Weather Bureau Report No. 202, issued by the United States Department of Agriculture, entitled "An Advance in Measuring and Photographing Sounds," by Benjamin F. Sharpe, M. A., in which the writer very ably and interestingly sets forth his methods and describes his appliances for the accurate measurement and record of atmospheric vibrations of sound. The pamphlet is a valuable contribution on the subject, of which it is impossible, however, to give a comprehensive description in the space at our disposal. Copies will, we presume, be obtainable through the Weather Bureau at Washington.

CAMERA OBSCURA No. 1, Volume I, is at hand, and, as was announced in its prospectus, is printed in four languages—French, English, German and Dutch. The English section contains an introduction by Chapman Jones, F. I. C., etc., an article on the "Daguerreotype Process," by Major-General J. Waterhouse, and another on "Acid Blast Process for Etching," by L. E. Levy, as the principal subjects. The number is embellished with several full-page and text illustrations from half-tone blocks, and to one who reads all four of the languages employed, it will doubtless commend itself.

THE YEAR BOOK FOR COLORISTS AND DYERS, Volume I, by Harwood Huntington, is a comprehensive reference book for the color chemist, containing a fund of information for those working in chemical colors. Many of the dyes

treated of, are used in orthochromatic photography, and probably others listed will in time be adopted. A large number of tables and a glossary add to the value of the book. Price, \$5. May be had of our publishers.

THE SOUTHWESTERN PHOTOGRAPHER, published by C. Weichsel, of Dallas, Tex., having satisfactorily turned its first year of existence, announces that it will aim to improve as it grows older, and with this end in view, it has secured the service of Professor M. Cummings, of that city, as editor, and Volume I of No. 2 is in evidence. All success to it and a welcome to our confrère.

PHOTOGRAPHY ANNUAL FOR 1899, published by Iliffe Sons & Sturmey, Limited, of London, is just received, and is, as its title-page intimates, a compendium of information and statistics of the year. It is edited by R. Child Bayley, F. R. P. S., and is the ninth volume of its series. It is illustrated with a collotype and several half-tone prints.

CLEMONS ORIGINAL RATIO CALENDAR, by John R. Clemons, is a tabulated sheet of figures and dates arranged in groups and columns, by means of which one may readily find the day of the week upon which fell or will fall any given date in any year or century since the beginning of the Christian era. This calendar represents a vast amount of labor, and is a credit to its author. Copies may be had of our publishers. Price, 25 cents each.

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PHOTOGRAPHED AND COPYRIGHT 1899 BY
DWIGHT L. ELMENDORF.

FROM THE INTERNATIONAL ANNUAL,
IN PREPARATION.

THE DEWEY ARCH.

"A THING OF BEAUTY IS A JOY FOREVER."

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D
W. I. SCANDLIN.

VOL. XXX.

NOVEMBER, 1899.

NO. 11.

PROFESSIONAL *VERSUS* AMATEUR.

A GOOD deal of interest and some comment has been aroused by an article published in a prominent English photographic journal of late date, written by an English professional worker, in which the writer expresses his belief that "much of the best photographic portraiture of to-day is done by amateurs," and in demonstrating his statement he calls attention to the monotony of professional portrait work, and contrasts with it the variety to be found in the work of the amateur, speaking particularly of the work shown by professionals, which he says has a tendency to flatness and over-lighting, attributable to the use of too much light in the studio; whereas, he says, the portraits produced by amateurs, made in the light of smaller windows, are bolder in treatment. He calls attention also to the repetition of backgrounds in professional work as against the ordinary accessories found in the work of the younger operators, and speaks somewhat to the point on matters of mounting and mounts, deploring the fact that fashion shapes a precedent in relation to light, accessories or background, which is immediately taken up and followed by the professional worker throughout the land, from which bad habit he claims that the amateur is to a large degree exempt.

If we are to concede the soundness of the writer's premises and arguments, we must admit that the professional is sadly at fault, and that his business judgment is as badly warped as his ability is lacking to produce good results, for, to allow a novice in any field of work, whether it be artistic, mechanical or otherwise, who is but scantily equipped with tools, accessories or experience, to surpass in the quality of his work the output of him whose equipment is fitted to his requirements, whose tools and accessories are the best obtainable for the uses to which they are applied, and whose whole experience and business training have been on the lines of his work, shows a weakness that we do not believe should be laid to the worker in any trade or profession. If we take the writer's definition of "best" in its broadest sense, and call it pictorial excellence alone, without reference to technical qualities of the portrait, we do not for a moment think that his

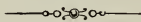
argument applies to the craft, on this side of the water at least. We believe there has never been a time in the history of photography when so much originality and thought were put into its execution as to-day. A study of the work of our best men will show this plainly, and the reports of conventions all over the United States will emphasize it, but the article in question has this great value to the thinking photographer: It shows him his danger, unless he is careful to keep himself alive and in touch with the progress of his art. It emphasizes the importance of study and the exercise of originality in composition and lighting. It should warn him that a little knowledge is a dangerous thing, and it should stimulate him to greater effort and more daring flights of imagination. That the amateur has done, and is doing, much to bring this about we freely concede, and as frankly give credit to those who have made their talents manifest in this direction, but, after all, do not both classes derive benefits from each other, and are distinctions between them wise, or even at all possible? There are fields open for both, and if the light which comes through the professional skylight is so strong as to obfuscate his mental perception, he should be, and we believe he is, glad to profit, as the writer of the article in question evidently has, by the experiments of his brother amateur.

OBITUARY.

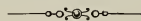
GEORGE R. HARDY, of the firm of Hardy & Gunn, well-known photographers of Troy, N. Y., died at his home in Lansingburg on the 8th of October, at the age of fifty-eight years. Mr. Hardy had long been suffering from an affection of the hip, which had sapped his strength to such a degree that he was unable to rally from a severe cold contracted about two weeks before his death. Mr. Hardy was a prominent temperance advocate and a member of the Independent Order of Good Templars.



JOHN A. TODD died on the first of October, at the advanced age of seventy-one years. Mr. Todd was one of the old-time photographers of the West, having been settled for many years in Sacramento. The latter part of his business career, however, was spent in San Francisco. Mr. Todd was a native of Westmoreland, England. His photographic work embraces a large number of fine scenic examples, made in the Sierra ranges by the wet plate process.



MR. FRANK S. OLDS, son of Mr. Spencer Olds, a prominent photographer of Newark, N. J., and himself well-known for his photographs of machinery and inanimate objects, died during September, at the age of forty-nine years. His reputation was not confined to the city in which he lived, but extended over the entire country, he having obtained many medals from societies for the excellence of his work.



THE death is recorded from Pittsburgh, Pa., of Mr. L. W. Johnston, one of the best-known photographers in Western Pennsylvania, who passed away at the age of fifty-four years. Mr. Johnston had been located for nearly thirty years at Newcastle, Pa., and had taken a prominent part in national photographic affairs at various times. He was a member of the Union Veteran Legion and the Knights of Pythias.

Items of Interest

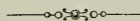
THE Photographers' Club of New England has just finished its annual convention, which was held in Boston on October 5th, 6th and 7th. The convention was a thorough success in all ways. The officers elected for the following year are as follow: President, H. H. Pierce, Providence; Secretary, H. A. Collins, Holyoke; Treasurer, G. H. Van Norman, Springfield. Vice-Presidents—C. W. Hearn, Boston; C. W. King, Portland, Me.; A. D. Wyatt, Brattleboro, Vt.; W. G. C. Kimball, Concord, N. H.; F. B. Johnson, Hartford, Conn. The next convention of the Club will be held in Boston next year.



THE Fifth Annual Convention of the Kansas Photographic Association, at its meeting held in Topeka, Kan., elected the following officers: President, J. J. Pennell, Junction City; First Vice-President, J. H. Leonard, Topeka; Second Vice-President, C. W. Smith, Larned; Secretary, E. K. Porter, Sterling; Treasurer, E. W. Glaze, Lyons. Twenty-three exhibits of photographs were made and judged, and the Convention was successful and enthusiastic.



WE note that the Actien-Gesellschaft für Anilin Fabrikation has been awarded the gold medal at the photographic exhibition in Florence, Italy, which we understand makes the twenty-second first prize awarded to this progressive firm at various exhibitions throughout the world.



A PRIVATE view of the forthcoming exhibition and salon of the Pennsylvania Academy of the Fine Arts and the Photographic Society of Philadelphia was held on the evening of Saturday, October 21st, and the BULLETIN would acknowledge with thanks a courteous invitation to be present. We regret that distance and editorial duties rendered it impossible to attend.



THE BULLETIN is informed by the Director of Liberal Arts and Chemical Industries of the Paris Exposition, to be held in 1900, that professional and amateur photographers will be afforded every facility to work upon the grounds of the Exposition, the payment of a fee of 50 centimes (10 cents in American money) per camera being required to obtain a certificate, which will permit photographs to be taken of practically everything except private exhibits, for which, of course, special permission will be necessary.

THE BULLETIN extends its hearty congratulations and best wishes to Mr. and Mrs. Hugh Morrison, Jr., who were married at the Emanuel Lutheran Church in Woodstock, Va., on the morning of October 4th. The groom is well known in photographic circles, and the happy bride is the daughter of the late W. Johnson, of Woodstock.

PHOTOGRAPHY has again been made use of by counterfeiters in the production of a new counterfeit \$10 certificate, lately discovered by the Treasury Department. This certificate is of the series of 1891, letter B, and has the plate number indistinctly rendered, probably number 74. The note is said to be a very clever imitation.

MR. D. L. ELMENDORF, whose recent article in *Scribner's Magazine* on the use of the telephoto lens in photography has created so much favorable comment, contributes to the BULLETIN an example of telephotographic work in the frontispiece which accompanies this number. Mr. Elmendorf's handling of the extremely difficult subject of the Dewey Arch is not only artistic in composition and beautiful in light and shade, but is also remarkable for its brilliancy and, at the same time, the softness of its effect.

MANY questions have been asked since the introduction of ammonium persulphate as to its keeping properties in solution, and *Photography*, in a recent issue, advises that a fresh solution be made up whenever it is employed, as, while it is true that a stock solution may be made that will keep if care is taken that it is made up with distilled water and that none of the solution once used is returned to the stock solution, it is almost sure to deteriorate if made up with ordinary water. The extreme solubility of the salt renders it an easy matter to prepare a fresh solution when required, which should be thrown away after use. The saving in expense is so slight, even when using a stock solution properly prepared, that it is better not to run the risk of its keeping.

THE Franklin Institute of Philadelphia has lately held a series of meetings in celebration of the founding of the Institute seventy-five years ago, which have been notable in showing the eminent work for the advancement of science and the arts with which the Institute in its various departments has been connected since its birth. Dr. Charles F. Himes, of Carlisle, Pa., in an address before the Photographic and Microscopic Branch of the Chemical Section, said that:

"On the publication of Daguerre's discovery there was one man in America ready to test it. Dr. Draper, several years before, in a series of papers in the Franklin Institute *Journal*, had detailed experiments on light that came very near to practical photography. He first succeeded in taking a photograph by the new process.

"Dr. Himes mentioned among the names of Franklin Institute officers and members who have been prominent in advancing this art Dr. Coleman Sellers, a most instructive writer on photographic subjects; Professor Morton, who headed the Government expedition to photograph the solar eclipse in 1869; Ives, the inventor of an almost ideal photo-mechanical process, a perfect color process, etc.; Carbutt, who produced a plate for recording the Röntgen rays, and many others."

Professor Himes opens a discussion before the same Society at its November meeting, the subject of which is "Photographic Record Work." This a topic of interest and importance, and one to which comparatively little attention has been given in this country.



THE ILLINOIS PHOTOGRAPHERS, SPRINGFIELD, OCTOBER 10th, 11th AND 12th.

THE First Annual Convention of the Photographers' Association of Central Illinois was opened by the President, Mr. G. N. Burleigh, on October 10, 1899. After the meeting was called to order The Capitol City Quartette Club rendered a few songs and received hearty applause. On motion of L. S. Anderson, the thanks of the Association was tendered to its members. Adjournment was taken until 2 P. M. At the second session a communication was read from the Missouri photographers, which was heartily endorsed by the Convention and a committee consisting of C. J. Van Deventer, W. M. Wiseman and V. E. Georg was appointed with instructions to meet at Milwaukee a day before the National Convention. It was moved and seconded that an amendment to Article 5 of the Constitution be made to make the initiation fee and annual dues \$3; annual dues, \$2; initiation, \$1; employees' initiation fee, \$1; employees' annual dues, \$1; to be voted on at the next session.

It was moved and seconded that Article 2 of the by-laws be changed to read as follows: That ten (10) members shall constitute a quorum for the transaction of the business of the Association. The meeting then adjourned until next day.

Second Day—Convention called to order. The committee on selections of officers made the following nominations: For President, G. N. Burleigh; First Vice-President, W. M. Wiseman; Second Vice-President, L. S. Anderson; Secretary, V. E. Georg; Treasurer, C. J. Van Deventer. It was moved that the Secretary cast the ballot for G. N. Burleigh for President, which was unanimously carried, and Mr. Burleigh made a short speech accepting the position. In like manner each of the officers was duly elected without a dissenting vote, they each acknowledged the compliment with a few remarks, assuring the members of their desire to make the Association a success.

It was moved to change the name of the Association from Photographers' Association of Central Illinois, to Photographers' Association of Illinois.

It was moved to extend an invitation to Missouri photographers to create a special class for same.

It was moved to tender the thanks of the Association to Miss Belle Johnson of Monroe City, Mo., for her artistic display and the interest taken in our society.

The selection of Judges was now in order, and the following were elected by acclamation: J. J. Mayes, Bloomington; D. D. Tennyson Litchfield, and C. Sympson, Carthage.

Then followed an address by Professor A. H. Griffith of Detroit, who took for his subject, "Art Side of Photography." The address was highly interesting and instructive, and was appreciated by all present. The Convention then adjourned until the following day.

Third Day.—The report of the Judges was read and the following awards made :

Class A.—First prize, gold medal, C. J. Van Deventer, Decatur; second prize, silver medal, L. S. Anderson, Springfield; third prize, bronze medal, W. B. Wiseman, Alton.

Class B.—First prize, silver medal, James Nott, Belvidere.

Class C.—First prize, silver medal, Fred H. Potch, Rushville; second prize, Miss N. M. Turnbull, Carlinville.

Class D.—Special silver medal, Miss Belle Johnson, Monroe City, Mo.

Class E.—First prize, bronze medal, Guy F. Bergen, Petersburg; second prize, bronze medal, Miss Turnbull, Carlinville; third prize, bronze medal, C. J. James, Greenup.

As there was no competition in the Grand Class, it was moved to vote the grand prize, "Bronze Statue," to V. E. Georg, Secretary, as a token of the Association's appreciation of his work as Secretary during the year.

Professor A. H. Griffith followed with a fine lecture and criticism, and illustrated it with a splendid collection of prints from the art gems of the world, which was warmly applauded.

Convention adjourned until 2.30 P. M., when they were all photographed. Then followed a short session and talks on timely topics by Mr. Harry Fell, C. M. Smith, Mr. Ross, Mr. Atwater and others.

Springfield was again selected for holding the next Convention. Practical demonstrations were given in the mornings during the Convention by the American Aristo Company and Nepera Chemical Company and Willis & Clements.

Everybody seemed pleased with the first Convention, and all had a very enjoyable time and expressed their intention to meet again next year and make the second annual a grand success.

V. E. GEORG, *Secretary.*



All copy for December issue must be in our hands not later than November 15th.

IMOGEN.

BY FRITZ HANSEN.

EVER since gelatino-bromide plates have been introduced in photography, and especially since they are being manufactured on a large scale, continual and strenuous efforts have been made with the object of furthering their photographic properties. These efforts tended in particular towards the further improvement of the already considerable sensitiveness of the plates. In this connection it was necessary to take into consideration that their other not less important qualities, such as clearness and gradation in the density of the negative, should be retained. Now the modern dry plates have arrived at a stage in which it may just be said that the conditions mentioned are still saved, provided that the development of the picture is very carefully managed. As is known, it is far more difficult to convert a correctly exposed negative from a rapid plate into a good negative, than from one of moderate sensitiveness; and it is true to-day, more than ever, as Bothamley says: "Development, in fact, is an art." On the other hand, difficulties may be reduced by a correctly chosen developer, which ought to correspond not only to the increased sensitiveness of the plate, *i. e.* (1), to be energetic enough, in order to give good details in the shadows, but, also (2), which must, at the same time, warrant good clearness, and (3), good gradation in the density of the negative, according to the printing process employed. These requirements are fulfilled in a most prominent way by the new developer "Imogen," which has lately appeared in the market. We have tested this new developer and are, indeed, surprised by the high degree in which the above-mentioned three most essential qualities of a developer combine with a thoroughly harmonious mode of action. We may add, as an important fact, that Imogen is qualified for this purpose even when using the ordinary household soda, and that it is perfectly free from the very disagreeable quality of certain other developers, which cause tedious and painful inflammations of the hands and fingers.

The manufacturers give the following directions for the preparation and application of imogen:

Imogen is a developing preparation, which is strictly adapted to the modern gelatino-bromide dry plates that are increased in their sensitiveness from year to year, and are, accordingly, also modified in their other properties.

Imogen develops the latent photographic image extraordinarily clearly and powerfully.

Imogen is free from the very disagreeable quality of certain developing substances, which injure the fingers of the worker.

I. PREPARATION OF THE SOLUTIONS.

SOLUTION A.

Sulphite of soda, crystals.....	100 grams (= 3 ounces 220 grains).
Imogen.....	33 " (= 1 ounce 28 ").
Water, hot.....	1,000 cubic centimeters (= 34 ounces).

SOLUTION B.

Carbonate of soda, crystals.....	250 grams (= 8 ounces 10 grains.)
Water, hot.....	500 cubic centimeters (= 17½ ounces).

The use of boiling water insures not only that the materials used are dissolved immediately, but is also of the further important advantage that the solution A, and especially, also, mixtures of A and B, have a considerably greater keeping quality than when cold water (containing air) is used.

¶ If the use of anhydrous sulphite of soda is preferred instead of the crystallized article, take only half the quantity prescribed for the latter [*i. e.*, 50 grams (= 1 ounce 290 grains)].

The carbonate of soda used need not be chemically pure; the common soda used in every household suffices, if the larger "water clear" crystals are picked out. Also the calcined soda (soda-ash), and even the carbonate of potash, which works somewhat more energetically, may be used, in which cases 100 grams (= 3 ounces 220 grains) are to be dissolved in 500 cubic centimeters (= 17½ ounces) of water.

Caustic alkalies and ammonia are not suitable for use with Imogen.

II. INSTRUCTIONS FOR USE OF THE SOLUTIONS.

1. In case of normal exposure mix—

Solution A.....	40	cubic centimeters	(or 2 parts by measure).
" B.....	20	" "	(or 1 part "

2. The image appears after 30–45 seconds, and is completely developed in 4–5 minutes.

3. Bromide of potassium, added in small quantities, has a tendency to keep the negative clear. Greater quantities, on the other hand, reduce the impression of light, especially in the shadow details, and consequently exert a restraining influence.

4. In case of under-exposure, or for plates producing particularly rich contrasts, the developer must be more diluted, for instance:

Solution A.....	40	cubic centimeters	(or 2 parts by measure).
" B.....	20	" "	(or 1 part "
Water	40	" "	(or 2 parts "

5. In case of over-exposure, or when using plates working softly and with small contrasts, add an abundance of a 10 per cent. solution of bromide of potassium, for instance:

Solution A.....	40	cubic centimeters	(or 2 parts by measure).
" B.....	20	" "	(or 1 part "

Bromide of potassium (1 : 10), about 75 drops (5 drops to 5 cubic centimeters).

An old developing solution, which has already been used several times, is very suitable for such cases.

6. If especially strong density is required, increase the quantity of the alkali and add some drops of a solution of bromide of potassium, 1 : 10, for instance:

Solution A.....	40	cubic centimeters	(or 2 parts by measure).
" B.....	40	" "	(or 2 " "

Bromide of potassium (1 : 10), 10 drops (10 drops to every 2½ ounces mixture).

7. Fixing is best effected in an acid fixing-bath. To obtain this, dissolve:

5 parts (by weight) of sulphite of soda, crystals, in
100 " " " water, acidulated with
1 part " " concentrated sulphuric acid, and then add
20 parts " " hyposulphite of soda.

RECENT ADVANCES IN X-RAY WORK.

[Notes of Lecture Demonstration by Dr. Mackenzie Davidson, Camera Club, London.]

THE following points are selected as being especially valuable and noteworthy, but they are by no means completely representative of all that Dr. Davidson has done in this direction. Fig. 1 shows us a diagram of what was until recently supposed to show the state of affairs in an excited vacuum tube. K is the cathode, spherical in form, shown in section. From its surface, rays proceed (normally to its surface), and meet or coalesce at P , thence proceed in close company through a distance, BQ , again diverge at Q , hit the antekathode, X , and are then originated as X rays in all directions, Xr , Xy , Xz . By experimenting with a tube containing a movable anode, X , which can be made to move up towards P , the efficiency of various positions of X has been shown in a simple and conclusive manner. Thus, with a circular anode in some such position as X , Fig. 1, we may regard it as a source of X ray energy in various

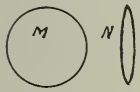
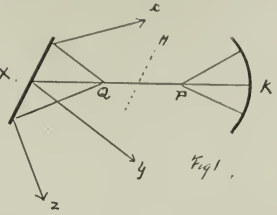


Fig 2

ways or in section. In Fig 2 M as a circular disc, when viewed normally. In Fig. 2 N as a much flattened ellipse, when viewed obliquely. (Place a coin on the end of the finger and view it, looking

straight down; then raise the finger, keeping the coin horizontal until it is seen on a level with the eye. The coin may appear of any shape between a straight line and a circle.) Thus the sharpness of the X ray picture (with anode as at X , Fig. 1) will depend on the relative position of the plane of the anode and the shadow-casting object. This was demonstrated by the apparatus shown in Fig. 3. This shows us two rectangular pieces of sheet tin, bent into semi-circular form, placed concentric, *i. e.*, parallel, with a small space between them. The inner (smaller radius) piece, A, B, C , is pierced along its median line by a row of pinholes of uniform size and at equal intervals. In Fig. 4 we show a ground plain. An excited tube is placed so that the plane of the anode X is central to the two

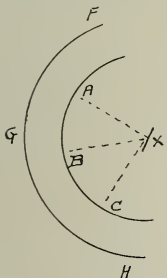
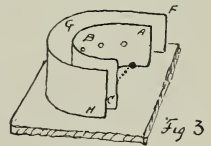



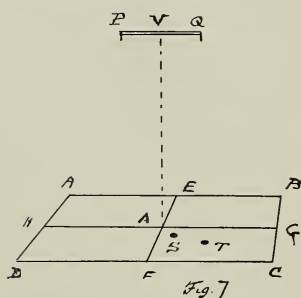
Fig. 4

curved pieces of metal, A, B, C, F, G, H . A strip of unexposed sensitive celluloid film is placed inside and against F, G, H . X rays coming from X pass through the pinholes in A, B, C , and give shadow pictures on the film. Consider three holes, A, B, C , Fig. 4. The hole A , as it were, "sees" the anode normally as a circle (Fig. 2, M); the hole B "sees" the circular disc of the anode obliquely as an ellipse (Fig. 2, N), and the hole C "sees" the anode edgewise as a line. Hence the shadows cast by the circular holes at A, B and C are shown as in Fig. 5, a, b and c , respectively. Then, removing A, B, C , the sheet of metal, and substituting wire netting

with square meshes, *i. e.*, the wires running horizontally and vertically, the same effect results. In Fig. 6, the crossing place of two wires is shown as caught in positions *A*, *B* and *C*, Fig. 4.

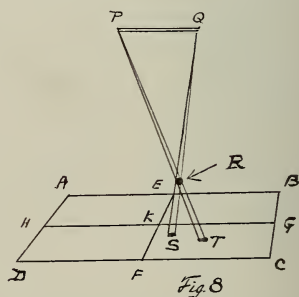
a  Thus at *A*, the source of rays being a circular area, both wires have soft-edge shadows; but at *C*, where the source is a vertical line, the vertical wire is not spread out, but shows as a fairly sharp shadow. In this way it was shown that, by moving the anode (*X*, Fig. 1) up to some such position as shown by the dotted line *H*, the generating region of *X* rays was brought down to a quite small circle (*P*, Fig. 2), *i. e.*, practically a point. Hence, with this point-source the shadow cast in any position, *A*, *B*, *C*, Fig. 4, was equally sharp. This is a matter of immense practical importance. It is to be noted that further experiments show that the portion *PQ* Figure of the path of the rays where they travel together as a straight line is much shorter than is generally supposed. That is, *PQ*, in Fig. 1, is drawn very much too long.

Localization of Imbedded Bodies.—Dr. Davidson has reduced localization to an exact science. Roughly, his method is as follows: A wooden framework (of box-like shape) has its open top covered by a tightly stretched drum skin of parchment nature, shown as *A*, *B*, *C*, *D*, Fig. 7. Joining the middle points (*EF* and *GH*) of opposite sides are two tightly stretched steel wires, *EF* and *GH*, intersecting at *K*. At a convenient height above and parallel with *HG* is a wooden bar, *PVQ*, so placed that *V*, its middle point, is vertically over *K*. Suppose it is required to locate a bullet imbedded in a limb. The limb is put on the platform



A, *B*, *C*, *D*, so that the bullet may be about the middle of *A*, *B*, *C*, *D*. A plate (in black paper envelope) is put below *A*, *B*, *C*, *D*. An excited vacuum tube is placed at *P*, and a shadow picture taken. Then, without moving the limb, the first plate is removed from below *A*, *B*, *C*, *D*, and a second plate put in its place. The tube is now shifted to *Q*, *i. e.*, just as far from *V* as *P* was, so that *PV* equals *PQ*. A second picture is taken.

On development we find the first plate shows as the cross wire *EF* and *GH*, and the shadow of the bullet at *T*. In the second we get the cross wires and the shadow at *S*. We now transfer our two negatives to a sheet of glass, *A*, *B*, *C*, *D*, Fig. 8, of the same size as *A*, *B*, *C*, *D*, Fig. 7, and with lines *E*, *F*, *G*, *H*, rules to correspond to the cross wires. A similar bar, *PQ*, is again adjusted to correspond exactly in relative position with the state of affairs in Fig. 7. The shadows of the



wires, Fig. 7, are easily made to coincide with the lines on $E F, G H$, Fig. 8. Then by a thread we join $P T$ and $Q S$. These must intersect at R the position of the imbedded body. A moment's thought will show that the body which casts the shadow, T (Fig. 7), when the tube is at P , must be in a straight line joining P and T . Similarly it must also be in the line $Q S$, and, therefore, is found at their intersection. Thus the position of R , the bullet, is now accurately known relatively to the three axial lines, $E K F, G K H$, and $V K$. Directly the limb is lifted up from the platform it will be found that the wires $E F, G H$, are almost certain to have just caused a sufficient pressure mark to enable the surgeon to mark on the skin with ink or pencil their position. Thus these two lines and the point where the vertical line $V K$ meets the limb enables him to cut down upon the imbedded body with absolute certainty.

Dr. Davidson adjusts the distances, $V P, V Q$, each at 3 centimeters, *i. e.*, $P Q$ 6 centimeters, as they fairly well correspond to the normal distance between one's eyes. Thus, when the two negatives are placed in a suitable stereoscope, the surgeon, before operating, and while the negatives are still wet, can get a clear and vivid mental picture. He sees the foreign body balanced in air, as it were, relative to the cross wires. This, aided by accurate measurements, has brought down this part of operative surgery to a matter of accurate measurement. In dealing with foreign bodies in the eye the cross-wire system is modified. A small piece of wire is stuck onto the lower lid and cheek. Two shadow pictures are taken, and the position of the foreign body is then seen relative to this wire of known dimensions and position. Over a hundred cases have been dealt with successfully by this method of localization.

The Anode.—Owing to the concentration of the rays upon so small a space as the anode, the difficulty arises of finding a metal which does not quickly melt. The best results have at present been obtained by using a plate of osmium, either held between two plates of aluminum or riveted to a plate of platinum. The supply of osmium is very limited, and the cost correspondingly large.

For verbatim report of this epoch-marking communication, the *Camera Club Journal* should be consulted. F. C. LAMBERT.



It is said that an excellent method of obtaining a title in white letters on a photographic print is to write or print the title with fine brush or pen on the paper before printing in the frame, using vermilion water-color as a medium. After printing, the color will wash off in the first wash water, leaving the title in white.

ERRORS in the reading of hydrometer tests often result from failure to keep its surface perfectly clean. Grease or dirt adhering to it may easily throw it out several degrees. Immerse it gently a little deeper than where it first comes to rest, so that it may be wet above its scale reading, and examine it when making your reading, with the eye at the same level as the surface of the liquid.

REDUCTION OF BROMIDE OF SILVER PRINTS.

BY P. VON JANKÉ.

AS the silver precipitate obtained by development of the exposed bromide of silver is the matter which builds up the picture in the bromide of silver positive process, as well as in all negatives, one would think that all reducers, applicable in the negative process, could just as well be used for bromide of silver prints. But this is not so, because our eye requires certain conditions in the appearance of the positive, which, in negatives, have only an inferior significance, and the reducers applied in the negative process would not be sufficient. Ammonium persulphate, a most excellent reducing medium for negatives too rich in contrast, for instance, is not at all suitable for bromide of silver prints, because all attacked tones will pass into correspondingly less dark ones in such a way that even the deepest coloration which the paper is capable of assuming will make room for a less deep dark gray. Therefore, no prolongation of the blackening scale of the paper takes place, but in its stead a scale of equal gradations from a lighter color. By application of Farmer's reducer (red prussiate of potassium plus fixing soda), also of separate solutions of chloride of copper, bromide of copper, or chloride of iron as first, and fixing soda solution as second, bath, the writer found the disadvantage that the last remaining traces of the silver precipitate assume a yellow-brown tone and give the picture the appearance as if it had a yellow fog.

If a somewhat dense fog is to be removed, the application of a solution of 10 grams iodide of potassium and 1 gram iodine in 100 cubic centimeters of water, of which 2 to 5 cubic centimeters are diluted with 100 cubic centimeters of water, is more suitable. In this solution the pictures are bathed until sufficiently reduced, and then they are put in a 10 per cent. fixing bath. The difficulty of judgment and the tediousness of repetitions that may be necessary caused the writer to apply another medium to remove the fog from bromide of silver prints, by means of which the appearance of the above-mentioned yellow-brown coloration was avoided, and the action of which can be followed as it proceeds. It consists of:

Alum solution saturated (10 per cent.).....	50 parts.
Thiocarbamid solution (4 per cent.).....	50 "
Acetic acid	1 part.

The pictures are bathed in this solution, with constant rocking of the tray, until a satisfactory reduction takes place, which can easily be observed on account of the slow action of the bath. Dense fogs disappear after from ten to fifteen minutes.

During the subsequent washing, the water has to be changed frequently to interrupt the reducing process.

Translated by

HENRY DIETRICH.

THE COLOR OF SILVER PICTURES.

BY R. E. LIESEGANG.

WE have a finished bromide of silver gelatine negative and a printed-out silver picture, only fixed, but not toned, before us. What a difference in the color! One is deep black, the other reddish yellow. And still the chemical analysis shows that both have been formed out of metallic silver. A chemical difference is therefore not the cause of difference in color. If we now examine both results under a microscope we find that in the dry plate the several black silver particles lay close together. In the print, or, still better, a glass plate, which was coated with the same printing-out chloride of silver gelatine emulsion as the paper, the fine grains of the picture-producing silver can be distinguished. This leads to the idea that the color difference is due to a different size of the silver particles, and this view is supported by quite a number of facts.

If we compare the printing-out chloride of silver plate and the dry plate before exposure, the former appears very transparent with only a faint milky cloudiness. The dry plate, on the contrary, is almost as opaque as paper. The later modification of the metallic silver depends, of course, upon the original coarseness of the silver salt. With bromide of silver, gelatine films can also be produced, which are pretty transparent, by interruption of the ripening of the emulsion. Such films, in which considerably less coarseness of the bromide of silver particles can be determined with the microscope, will give red pictures in the development.

A similar dependency of the color upon the size of the silver particles we see in the development of the printing-out paper. If a faintly printed-out silver picture is put into a solution of gallic acid it will intensify to any desired degree. If the picture had only a short exposure the coloration after fixing will be greenish black; after long exposure, it is red to brown. A closer study of this process shows that the influence of the time of exposure upon the coloration is only a secondary appearance. Pictures of short exposure are left in the developer for a longer time than those of a long exposure. The time of exposure is only important as it applies to the later tone. The intensification of the picture takes place by the gallic acid reducing the nitrate of silver of the light-sensitive film to metal, which, in a nascent state, precipitates upon the exposed chloride of silver particles. The longer the picture remains in the gallic acid solution, the larger the silver particles will become. I mentioned above that red tones could also be obtained on bromide of silver gelatine plates if the bromide of silver contained therein was very finely distributed. Professionally, we find exclusively the coarse-grained bromide of silver gelatine coating in use, because a much shorter time of exposure is required for the production of the picture. For the dry-plate manufacturer it is a very important physical process, which decides the coarse grain of the emulsion.

If an aqueous solution of nitrate of silver is poured into a gela-

tine solution, mixed with bromide of potassium, the same chemical process will take place as if the pure liquids were poured together. White bromide of silver will form. The mixture has a milky cloudiness. No bromide of silver will precipitate when left standing, but it remains suspended in the liquid. It consists of extremely small particles, which are carried by the thick liquid gelatine solution. This is called an emulsion. The bromide of silver is not correctly dissolved, because the gelatine can dissolve it just a little, as pure water. If this emulsion is examined with a microscope, small grains are discovered, which do not precipitate on account of their smallness. This is, in fact, the difference between a true solution and an emulsion; that in the former the distribution of the dissolved body is so extremely great that in the greatest enlargement no solid bodies can be seen. If, for instance, chloride of sodium is dissolved in water, it cannot be noticed that a foreign body is present in it. On account of this difference in the size of the only suspended and the actually dissolved particles, the emulsions possess properties which are essentially different from those of the solutions. The most important is the ripening. If the emulsion is left standing in the water for a longer time, so that the gelatine remains liquid, the bromide of silver will have a coarser grain; the several bromide of silver particles will join to a larger complex. Eder has proven, that in a liquid emulsion the bromide of silver grain will enlarge 0.0008 millimeter to 0.003 millimeter in diameter. In fourteen days, even lumps of from 0.02 to 0.04 millimeter diameter will form, which are visible with the naked eye. This grain enlargement is considerably accelerated by heating. A distinct sign for the progress of ripening is the change in color of the emulsion. Thin films of the same appear yellow-red in the transparency, if looked at immediately after mixing. It changes afterwards to red-violet, and, finally, gray-violet to gray-blue. If a glass plate is coated with unripe, and another with ripe, emulsion, the former has to be exposed twice as long as the latter, to get the same picture at equal development. The ripe emulsion furnishes more sensitive dry plates than the unripe emulsion. In the ripening emulsion no chemical process takes place apparently; the bromide of silver is already completely formed. The particles join only to a larger complex. If the ripening is overdone by heating the emulsion too long, the grain will become so large that the gelatine could not carry them. One part of the same would then precipitate. Even before this takes place, and the emulsion is not suitable for the preparation of dry plates, fog will form in the development.

Translated by

HENRY DIETRICH.



PHOTOGRAPHERS and scientists all over the world will watch with keen interest the application of the camera and dry plate, whether in combination with kite or balloon, or perhaps both, to the military operations now in progress in South Africa. The conditions seem to promise some remarkably interesting developments in this direction.



PHOTOGRAPHED BY H. M. TOPLEY.

THE GOVERNMENT BUILDING AND RIDEAU LOCKS, OTTAWA.

For description, see page 354.

COPPER-TONING BATH AND INTENSIFIER FOR BROMIDE OF SILVER GELATINE PICTURES.

By DR. J. M. EDER.

WITH Captain V. Toth I have called attention to the possibility of giving silver pictures a reddish tone by suitable precipitation of ferricyanide of copper, and I have also mentioned the method of coloring silver negatives red brown by means of lead intensification and subsequent treatment with copper salts. Namias published, subsequently, that copper salts, mixed with ferricyanide of potassium, would cause upon silver pictures a deposit of red oxide of copper and ammonia, but the experiments in this direction were unsatisfactory. The toning bath for the production of reddish tones upon bromide of silver gelatine pictures, published in the "Year Book of Photography" for 1899, a mixture of sulphate of copper, excess of carbonate of ammonia and red prussiate of potassium appeared to be better, but I could obtain no clear solution and proceeded therefore in the following way:

Five grams crystallized sulphate of copper were dissolved in 1 liter of distilled water and a saturated solution of carbonate of ammonia was added, until the light blue precipitate of carbonate of copper dissolved again in the excess of the carbonate of ammonia. A solution of 12 grams red prussiate of potassium in 700 cubic centimeters of water was then added, by which a heavy precipitate resulted. The added quantity of carbonate of ammonia was therefore not sufficient to keep the resulting ferricyanide of copper in solution. I therefore added powdered carbonate of ammonia, until the precipitate dissolved to a clear dark-blue liquid. This liquid, representing a solution of ferricyanide of copper in carbonate of ammonia, is the copper toning and intensifying bath.

1. *Application of the copper-toning bath to toning bromide of silver gelatine paper pictures.*

If a bromide of silver picture is put into the copper bath it will be colored warm brown in the beginning, the color will then change to red and finally to a bright red and almost carmine. If these pictures are put in diluted sulphuric acid or muriatic acid (1 : 500), the tone will be brick-red. With a pretty strong acid bath (1 : 50—1 : 100) the process will proceed quickly. Weak aqueous ammonia changes the tone more to a bluish red. If the pictures, colored red in a copper bath, are well washed and put into a sulphate of copper solution, the shade will be a little darker, and a subsequent weak acid bath changes the color again to a lighter shade. Chloride of iron effects a brownish red coloration of the copper picture. The coloration resists the influence of light and the action of alkali carbonates and also acids.

2. *Application of the above-mentioned copper solutions to the intensification of bromide of silver gelatine negatives.*

Fixed and well-washed bromide of silver gelatine negatives intensify in the copper bath slowly and surely. The action can easily be controlled. The coloration is dark brown in the beginning, and the intensification proceeds harmoniously; if subjected to long action, an extremely intense, cherry red coloring is obtained.

I do not know whether this kind of copper intensification has before been proposed; however, it is worthy of consideration. It is fully as good as uranium intensification and is even more durable. For half-tone pictures it is very useful.

Translated by

HENRY DIETRICH.

HOW TO FOCUS CORRECTLY IN DARK INTERIORS.

BY DR. A. MIETHE.

IT is a well-known fact that the exact focus on an object becomes more difficult as the illumination is lessened and the darker the object is, on account of the weak light of the applied instrument. An essential help when taking interiors is the application of an artificial light. To this end the focus is not taken on the object to be photographed, but on a flame, which is placed in the focal line. Upon such a flame we can focus at any time.

A further though less known help is to be found in the oiling of the ground-glass. If the ground-glass is coated with a fatty substance, it will become so transparent that the picture circle will appear much smaller without moving the eye. The consequence is that the judgment of the objects depicted on the ground-glass is rendered very difficult. By suitable oiling this difficulty can be remedied, particularly if linseed or a similar oil is used. A few drops should be put on with a cotton tuft, well distributed, and rubbed over with another cotton tuft, until the desired transparency is reached. The focusing will now be much easier than before, particularly if the eye is left to rest for a while under a focusing cloth, to get it used to the weak illumination. This is very important, because it can hardly be believed how much the sensitiveness of the eye can be increased in the dark. A still better focus can be obtained by substituting a transparent plate glass for the ground-glass and using with it a good focusing glass. If in place of the ground-glass a piece of plate glass upon which a pretty close net of fine lines has been drawn with a diamond, is put into the camera, and the focusing glass is used, even the darkest objects with the least light can be focused upon. In the picture field of the focusing lens a sharp picture of the lines alongside of a sharp picture of the objective can be seen.

Translated by
HENRY DIETRICH.

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

YELLOW Filter for Orthochromatic Plates.—To obtain the best results with orthochromatic plates, the application of a yellow glass is in most cases a necessity. The following is a good formula for producing yellow-colored glasses:

<i>A.</i> —Acridin yellow	10 parts.
Alcohol	150 "
<i>B.</i> —Fuchsin	5 "
Alcohol	100 "

Mix 20 parts *A* and 8 parts *B*, and add it to collodion, with which the plates are coated.

Vignetting Enlargements.—This can be done in pretty nearly the same way as in the ordinary printing process. Cut from stiff black

paper a vignette, as it may be desirable for the picture, but take care that it is considerably smaller than one required for use in the ordinary process. This is pasted to a strip of wood, so that it will stand vertically, and when placed in the interior of the apparatus between negative and lens, its opening will be in a position to give the desired vignette.

By moving the same backward and forward a fine and exact graduation can be obtained, which becomes extremely soft, as the vignette, being out of focus, will never show sharpness.

The vignette can also be put between negative and condenser, but its size has then to be larger.

Oval and other cut-outs showing sharp outlines are simply fastened upon the film side of the negative.

Fluorescence in Röntgen Rays.—If molten enamel, crown glass, ordinary glass, artificial ice, china, enamel faience and powdered enamel, before melting, and diamonds in cut condition, are exposed to Röntgen rays, these bodies will fluoresce, and the first-mentioned ones stronger than the latter. A strongly heated mixture of sulphate of calcium, with 5 per cent. of sulphate of manganese, acts with the Röntgen rays in the same manner, as in the direct electrical discharge becoming fluorescent.



THE REMOVAL OF HYPO AFTER FIXING.*

BY CHAPMAN JONES, F.I.C., F.C.S.

THE getting rid of sodium hyposulphite after fixing prints, either more quickly or more thoroughly than is possible by the simple use of water, has exercised the minds of photographers for the last fifty years. Hypo and fading used to be closely associated together, and not without reason, and in the early days of photography the fading of prints was regarded as an unmitigated misfortune. We have lived to see fading regarded as an advantage, so far as it is possible to go back from the enthusiasm of desire for the welfare of photography. But we have also lived to see the fight against fading entirely successful in the mastery that we have over the platinum and carbon processes. But even if we eschew silver prints, sodium thiosulphate must be used for fixing negatives, and the getting rid of it after it has done its work is a problem that is likely to remain with us.

The first recorded attempt that I know of to complete its removal was by Sir W. J. Newton, who in 1855 said that he had used a solution of alum for this purpose. Alum is still used, though for negatives more than for prints, and for some purposes remains the best reagent for the purpose.

When the thiosulphate is decomposed, its products of decomposition remain, instead of the original salt. These products may not be equally harmful in all cases, and, therefore, it is not possible to determine absolutely the comparative values of various reagents.

That which is best for a silver print that has only to be preserved may not be the best for a negative that may require intensification. In the latter case the aim will probably be to prevent the formation of a precipitate with mercuric chloride, and a reagent that produces compounds that precipitate the mercury salt is useless. But if these compounds are without effect on a silver print, the same reagent that is useless for negatives may be effective for prints. An essential property of any reagent that is to be used with confidence is that it shall not attack the image itself, and this is a matter that has been too much overlooked.

* *Photography*, September 2, 1899.

Sodium hypochlorite was suggested in 1864 by Mr. F. W. Hart, and he has since advocated its use. This has the advantage of completely oxidizing the remaining thiosulphate to the harmless sulphate, but it is so vigorous a reagent that it readily attacks the image, either in prints or negatives. To guard against this disaster, a very weak solution was used, and the washing liquid was tested by means of the blue "iodide of starch." If the blue was discharged by it, the print was treated to another weak bath of the hypochlorite, otherwise the hyposulphite was completely oxidized. The silver chloride or sulphate remaining from the silver thiosulphate was removed by washing once with weak ammonia. The chief drawback to this method is that the image itself must be more or less attacked.

In 1866 Dr. Angus Smith proposed the use of hydrogen peroxide for removing by oxidation the last traces of hyposulphite. He remarks, however, that the peroxide slowly bleaches a print, and, therefore, the solution must be used "extremely weak." This, therefore, is a grave objection to its use. He says that it seems that the thiosulphate is completely and instantly converted into sulphate, but in this he was very much mistaken, and I do not know that this error has ever been pointed out, except a few years ago, by myself in these columns. The fact is that the peroxide acts at once on the thiosulphate, but that only about one-third of it is changed to sulphate, and even after many days less than one-half of the sulphur present will be found to have been oxidized to sulphate. The other two-thirds of the thiosulphate appear as tetrathionate. Now tetrathionates give a precipitate with mercuric chloride, so that hydrogen peroxide is useless as a hypo eliminator for negatives that are to be intensified by means of mercury.

In 1872 Dr. Vogel suggested a weak solution of iodine for oxidizing the last traces of the thiosulphate. This, of course, converts the thiosulphate completely into tetrathionate, so that it is about as good as peroxide of hydrogen in this matter, but it is far superior in the stability of its solution. While hydrogen peroxide deteriorates rapidly without any show of change, the approximate strength of a solution of iodine is at once evident by its color. It is possible, therefore, to watch the exhaustion of the iodine solution, and this cannot be done with either sodium hypochlorite, or peroxide of hydrogen. In treating prints, too, the iodine will color the paper blue when it has oxidized all the thiosulphate in its immediate vicinity.

Iodine obviously is of no use for negatives. We have often been told that it is useless for prints—that the product of its action on the thiosulphate, that is, the tetrathionate, is as injurious as the thiosulphate itself. But this statement, I fear, is not founded on fact, and my own experience contradicts it.

Twelve years ago I prepared some silver prints on albumenized paper, and, after fixing, rinsed once only, put them into weak iodine solution until the paper back was blue, then into water containing a very little potassium nitrate, to remove the blue color, rinsed again, and dried. The rinsings were simple rinsings, not soakings. A print so treated now shows hardly any, if any, indication of fading, while other prints treated similarly, but without the iodine, changed in a few months, and now are quite yellow. These prints were kept together in a portfolio.

Iodine, like the other two reagents, attacks the image itself, and Dr. Vogel, in recommending it, is careful to say that if the manipulations are carried out rapidly, the picture is not affected.

The reagents already mentioned have been rediscovered as hypo eliminators by various persons from time to time.

Chrome alum has been suggested instead of common alum, chloride of lime instead of sodium hypochlorite, and other such substitutions have been proposed that any school boy might suggest after a few weeks' study of chemistry.

In 1895 potassium persulphate was introduced as a hypo eliminator for both negatives and prints. The alkaline persulphates, like the other reagents, except alum, attack the image itself. Indeed, so readily do they do this, that ammonium persulphate is chiefly known as a reducer of density. Whatever their action upon the thiosulphates may be, they have practically no action in preventing the formation of a precipitate by the addition of mercuric chloride. This indicates that the product is probably largely or entirely tetrathionates. I do not see that the persul-

phates have any advantage over the other reagents, except that they can be kept in the solid form more conveniently than iodine, and when in the solid form they are more stable than solutions of hydrogen peroxide, or sodium hypochlorite.

It seems that every reagent so far proposed that will oxidize the remaining traces of thiosulphate is able to attack the image also. Alum solution, either by itself, or slightly acidified, or very weak acid without alum, will destroy thiosulphates, and the products of the action give no precipitate with mercuric chloride or silver nitrate.

Alum or acidified alum is, therefore, far superior to either iodine, peroxide of hydrogen, or the persulphates, as a bath for negatives after washing them, to ensure the removal as far as possible of substances likely to interfere with the clean action of mercury or silver salts upon the image.

As to the getting rid of hypo from prints, I doubt whether any treatment will confer more permanency than a good washing with plain water. But the washing must be thorough, and not of a few minutes' duration only. If certainly permanent prints are wanted, of course, either the platinum or the carbon process will be employed. But if silver prints, especially large ones, are wanted quickly, or if water is scarce, the use of "eliminators" is worth attention, and especially iodine. Prints may by their means be finished and dried or mounted within half an hour of their removal from the fixing bath.

PAINTERS WHO HAVE INFLUENCED ME.

J. CRAIG ANNAN.

MR. J. CRAIG ANNAN, the well-known pictorial photographer of Glasgow, Scotland, in a recent lecture before the Leeds Camera Club on the above subject, said, in part :

"Greatly to my relief I am asked to speak to-night, not on a technical photographic subject, but upon painters as they have impressed me. And until I commenced the preparation of this lecture, and attempted to define my opinions, I scarcely realized what the justifications for my predilections were. Of course, they are matters of personal sentiment, but it is a subject in which, fortunately, each may feel for himself. At first I was overwhelmed with the formidable array of masters, of every age and nationality, in whose work I had found interest and delight—Rembrandt, with his marvelous power of expression, his mastery of light and shade and composition, and his glowing golden color. Franz Hals, overflowing with the love of life, and expressing it in such large, masterly way, suggesting that his greatest works are but play to him, and that behind all he has an enormous reserve force (here a slide 'The Banquet of the Archers of St. Adrian' was projected in illustration. Then there is Velasquez with his simple work, full of dignity and style and character, his delightful series of Philip IV. portraits, showing in each how a somewhat feeble countenance may lend itself to masterly portrayal; his portraits of admirals, councillors and ecclesiastics, all providing a world of inspiration. Then one must think of the Italian painters—of Titian, whose great religious pictures are worlds beyond the scope of photography, but whose portraits excite one to delight in their wonderful combination of simplicity of pose and effect, with their gorgeousness of color (showing an example from the Pitti Palace). Tintoretto also delights us with his

taste and power as in his celebrated 'Miracle of St. Mark,' at Venice; whilst Giorgion intoxicates us with the glory of color. Botticelli, too, charms our fancy with his exquisite imaginings, his ethereal creatures who float before us in such lovely lines, spirituelle in the extreme; but those angel forms will never impress a photographic plate (here Botticelli's 'Spring' was shown). More real is the work of Andre del Sarto. His portrait of 'A Young Man,' in our own National Gallery, has always impressed me as the perfection of what a photograph might be. And when I saw his work in Italy some years ago I was impressed again and again with what I might call its photographic possibilities.

"Passing to Germany, we have Nuremberg's Albert Dürer, who surprises us with his versatility (a slide of the 'Melancholia' was shown and commented on). Then in our own country what a group of masters we had in Reynolds, Gainsborough, Romney and Raeburn, and, before them, though not of our own nationality, we had Sir Anthony Vandyck, courtier, as a man and as a painter; and still a century before him, that prince of painters, whom, in my opinion, it might benefit photographers more than any other, to study—Hans Holbein.

"And here, in the preparation of my lecture, I discovered I had omitted all mention of landscape painters. But I was forced to the conclusion that there had been no unjustifiable neglect, inasmuch as I had had my greatest pleasure in the works of the masters of portraiture I have mentioned. Although I have enjoyed and appreciated Hobbema, and Ruysdael, Wouverman, Corot, Diaz, and the Barbizan School, Constable, Turner, and the landscape portion of the Italian masters' pictures, yet my supreme pleasure has always been in the portrait work of the masters. Although I appreciate that these are impossible to the photographer, still he must not pass them by. To a lesser extent, this impossibility holds good with landscape work; still, the necessity of photographing what is there, with only the power of selecting the point of view, is there to confront the man who has revelled in the grand massive compositions of Constable and the tumultuous delights of Turner.

"In portraiture the subject is more under command. We have choice of subject, dress, light and pose, and one cannot help feeling that our difficulties are not insuperable, and that, with the advent of some real master, a photographic portrait may be produced which will take its place in the world's art treasures.

"The many qualities of oil paintings may only be embodied in part in photography, and, of photography's weaknesses, a marked one is the impossibility of obtaining an *impasto* effect—even the accepted artistic monochrome processes have this in common. Photographers have tried to vary the texture of their prints, but, whichever they choose, it is the same in shadow and high light, and there is an entire impossibility of showing intention in this direction.

"The question of how much we ought to be influenced by any master, and where the line of legitimate influence must be drawn, needs consideration. If the producer of the picture has been deeply

influenced by a certain great master, it is a credit and an honor to him to be able to follow the working of the master's mind, so that his own, the student's, work is a digest of it, and not a mere superficial imitation or copy. Such a copy—an undisguised plagiarism—condemns the production itself; but to be influenced in a legitimate way is quite another matter, for without influence we should be back among the cave-dwellers, and the most daring and original of us would be scratching a rude resemblance of his dog upon the sand before his dwelling.

"I advise a study of the great masters' work, and if one has not opportunities of seeing it, then the admirable reproductions now possible are the best substitute. If you have the proper receptive faculty, an impression will be made, which may appear to pass away, but which is only treasured up for the future."

Mr. Annan then dealt exhaustively with Hans Holbein, his life and work, and illustrated his points by many lantern slides.

"The reasons I have given for my great interest in Holbein, as a photographer, apply in almost every particular to the works of Velasquez and Vandyck. Velasquez is my second favorite; but many consider him the finest of all portrait painters, and his influence on Whistler and contemporary art has been very great (here a slide of 'Admiral Adrian Parlado,' in the National Gallery, was shown, and its qualities of grandeur of pose, dignity of composition and feeling of sumptuousness were pointed out, and a comparison was made between the style of Holbein, a German burgher, and Velasquez, a noble of Spain). For Velasquez was a man of gentle blood on either side, and his high spirit and that of his race is evident in his work, and in the portrait of Duc Olivaris (shown on the screen) he seems to have revelled in his sumptuous imagination. The ease and grace of his swinging curves show it to be a natural expression of a joyous, noble nature." The lecturer then gave details of the life of Velasquez, and showed various examples of his work, especially the portrait of Don Carlos, brother of Philip IV., with its effect of grandeur, produced by allowing a strong light to fall upon the floor, casting a deep shadow from the lower part of the figure.

"Velasquez was a marvelous draughtsman, and in the 'Forge of Vulcan' (shown on the screen), one of his earlier pictures, we see with what power and breadth of effect he could paint the human figure, whilst his capacity for grouping and genius for decorative effect is admirably displayed in 'The Surrender of Breda.' Walter Armstrong, in his 'Art of Velasquez,' says: 'The "Surrender of Breda" has long been accepted as the finest historical picture in existence; I feel inclined to call it the only one which gives unalloyed delight.' Dealing further with Velasquez, Mr. Craig Annan showed how, like Holbein, he delighted in and painted successfully all types, and he illustrated this by various slides.

Then speaking of Sir Anthony Vandyck, born in 1599, the same year as Velasquez, he describes his style as being scarcely as strong as the latter. "We feel sure that he painted more to please and flatter.

Both men were courtiers; but I doubt whether Vandyck would ever have dared to differ with his monarch as Velasquez occasionally did. In Vandyck's picture, however, there is an easy grace and refined charm from which we may draw infinite pleasure and instruction.' Instances were then given of Vandyck's work, and, as each were thrown on the screen, Mr. Craig Annan dealt with their characteristics. Afterwards he showed a slide of the famous "Alexander Dillafaille" portrait at Brussels, almost reminding one of Hals in its spirit and abandonment, and concluded with the delightful group of the "Children of Charles I." "How simple and natural they appear," said the lecturer, "standing together in a row, and how the apparent lack of posing is really the greatest posing of all. *Ars est celere artem!* Note how the figures, too, almost fill the canvas, without any sense of crowding, and how strong and powerful the picture is, whilst the subjects themselves retain all their childishness and innocence."

Mr. Annan concluded by expressing the hope that what he had said might help his audience in their study of such pictures and in their photographic work.



LIGHTING: ITS IMPORTANCE IN PHOTOGRAPHY.

BY T. N. ARMSTRONG, IN "BRITISH JOURNAL OF PHOTOGRAPHY," OCTOBER 6, 1899.

PERHAPS there is no more important factor in the obtaining of successful results by means of photography than the possession of a thorough knowledge of the most suitable form of lighting to employ in the particular class of subject being dealt with.

It does not matter what particular branch of photography is being pursued, lighting is of the utmost importance, and any negligence in regard to it is certain to be reflected in the quality of the work turned out.

In portraiture, for instance, any one who has never experienced the difficulty can form no idea of the amount of labor and thought that is incurred in the fitting up of a studio before the best effects in lighting are obtainable, and, if this be necessary for the production of not only portraiture where specially fitted-up studios are concerned, but what is of equal importance, lifelike results, how much more difficult is it to obtain anything like equal results in what is termed "home portraiture," a branch of photography now largely practiced by thousands of amateur workers, who derive a large amount of pleasure therefrom.

In studying any face it is intended to photograph, the first aim should be to ascertain what light best suits it, and it only requires a little consideration by any one desirous of practicing portraiture to understand that the light most suitable for one face would not by any means be equally so for another.

Therefore, it follows that the professional, working in a specially fitted-up studio, has at command, by means of his top and side lights, each of which is furnished with a well-devised system of screening, a power which enables him to execute portraiture in a manner superior to that which any one working without these adjuncts and facilities need never expect to attain; and, if we examine still further into the question of what is required in lighting a face to its best advantage, we will find that not only must consideration be bestowed upon the amount of direct and diffused light employed, but some thought must be given to the proper direction from which both the direct main and also the diffused lights are permitted to fall on the face and figure of the sitter.

Portrait painters, as a rule, work with a side light falling at an angle of 45 degrees, because this is found to suit the majority of faces; and this has been followed in a great measure by professionals in the construction of their studios.

In executing portraiture outside a specially fitted up studio, say, in such a situation as a large-sized room having an ordinary window, much may be done to assist and improve the lighting of a face by means of a few well arranged screens and reflectors.

When work of this kind is attempted in an ordinary room without any such provision being made, it generally ends in failure, by reason of the lighting showing too powerful contrasts, and this is painfully evident by the shadow side of the face coming out almost black, whilst the side next the light is far too hard, results brought about by a want of diffused light, to obviate which not only must there be provision made to throw reflected light upon the shadow side of the face, but, what is of much greater importance, the light that is permitted to reach the side of the face next the window must be filtered or diffused by means of thin, transparent muslin screens.

In carrying out an arrangement of this kind it does not necessarily follow that the entire surface of the window should have blinds fitted to it, for this would tend to cut off an amount of useful light, that can ill be spared when working under such cramped conditions of lighting. All that is required is to provide some simple screen of muslin of just sufficient dimensions as will be capable of diffusing all the main light that otherwise would reach the face. A screen of muslin, made by stretching this material on a light frame 3 feet square, so that the frame can be interposed between the face and the window at a point just outside the range of the lens, will be found to work admirably.

Any one desirous of attempting portraiture in ordinary sitting-rooms would do well to try the following experiments, from which he will be able at once to judge of the immense importance that is attached to the proper lighting of the face. At a distance of say 4 feet from any ordinary window, let a sitter be placed on as low a chair as possible, and let the body be posed so as to have the chest and front part of the figure almost facing the window, but not quite under the full light of same; then, without moving the chest or figure, let the face be turned away from the window until a somewhat side light only falls upon it. If the operator now steps back and views the effect of such a disposition of lighting, he will at once see that it is quite unsuitable, for the side next the window is much too brightly lighted, whilst the off side of the face is enveloped in deep shadow, in which the finer details of the face are entirely buried. At this stage let the operator bring to his aid the service of some kind friend, and, without altering the position of the sitter or moving from the same spot from where he viewed the effect, let his friend or assistant hold up slightly above the head of the sitter, at a point between the same and the window, the muslin screen described previously, and the very moment it is placed in position he will be surprised at the change that comes over the sitter's face, for not only will the side next the window, that was previously far too bright, appear to be beautifully softened down, but the shadow side will immediately appear to lighten up, and the dense shadows previously apparent will disappear, and detail spring into view that was entirely unseen before the screen was placed in position. And, if at this stage the services of some simple reflector be brought into requisition, so that a somewhat front side light be thrown upon the front as well as the shadow side of the face, a marked improvement will have been effected, and, under such conditions, heads and busts may be well photographed in any well-lighted sitting-room; but it must not be imagined that full effect is capable of being given to every class of face in such situations, for this is really impossible with some kind of faces, where more or less top light is required to yield lifelike results, and which can only be attained in properly fitted-up studios.

In another branch of photography, viz., copying, lighting also plays a most important part. Take, for instance, the photographing of oil paintings. Here, again, we see the need of having command over the light that is permitted to reach the object, for hardly any two pictures will be found that require exactly the same treatment, as, apart from the ever-varying range of colors met with, there are also great differences in the skies, some paintings having wide expanses of such and others none at all, and these large portions of what may be termed high lights in a paint

ing require to be specially treated in the way of lighting, otherwise these parts are hopelessly over-exposed before the details in the darker portions are sufficiently brought out, and it is only by unwearied practice that any one becomes expert in the copying of oil paintings. That very much of the success in this work lies in being able to have complete control over the light at command the writer well knows, for his experience, gained by photographing hundreds of oil paintings during recent years, has clearly shown that there is a best form of lighting for this particular class of work, and this will probably be found by those anxious to undertake the work in the direction of a top light alone; but it must also be a very high light, and the studio must also have plenty of length, so situated that sunlight never reaches it. With such a high top light there is no difficulty experienced with reflections from the surface of the paintings, provided they are placed upon the easel in a vertical position and suitable material is spread over the floor. This is the natural outcome of a simple law in optics, and without a suitable light there will be no end of trouble in equally lighting the surface of any picture, and, in the case of oil paintings, any broad expanse of reflection is quite fatal.

The obtaining in monochrome of correct color values when photographing colored objects is quite a different matter now to what it was fifteen years ago. At that time the reproduction in monochrome of colored objects was considered well-nigh an impossibility, and what was attempted in this direction before the introduction of chromatic plates was confined chiefly to the manipulation of the negative and the special treatment of same in printing.

These negatives were generally produced in a thin, fully exposed form, and were largely worked up by hand, such as the strengthening of high lights and half-tones, and also giving depth to the shadows, thereby lowering the tone of the colors which came out too prominently and raising others to their proper proportions. Although in the copying of oil paintings more or less of this kind of modeling is still practiced, the wonderful improvements effected in the orthochromatizing of plates has tended to reduce the labor previously necessary to a very great extent, and now, with a well-appointed system of top lighting and facilities for shielding certain portions of the object, results are obtained far in advance of those produced years ago.

In connection with the photographing of numerous light-colored objects, such, for instance, as statuary, the direction of the main light, as well as the quality of the light employed, plays a most important part if pleasing results in light and shade are to be secured. It is quite surprising the difference in appearance such objects will present under varying dispositions of light.

With heavy objects, such as statuary, much difficulty is sometimes experienced when they have to be photographed in unsuitable positions. As a rule, however, a well-diffused top light, backed up with, when necessary, an increase of reflected light at such points as bring into strong relief such parts as require to be portrayed as high lights, will be found to yield excellent results.

Heavy statuary as a rule, especially in all well-appointed public galleries, is never placed in situation without a considerable amount of thought being bestowed upon the manner in which it is to be lighted, but it will be found very often the ever-varying direction of the sunlight and daylight always yields a particular hour of the day when it is seen to the best advantage, and this should be closely studied when photographing same.

In commercial work there are innumerable instances where special provision has to be made for certain objects, among which may be mentioned such articles as delicately formed fabrics, in which fine traceries are present, and in which also the design is represented by the form of the fabric, an instance of which we see in lace articles and fine embroideries. When dealing with many of these, special provision must be made when stretching them, so that the design of the lace is not interfered with by excessive stretching, and this is best accomplished by using a special stretching frame, which only applies equal tension in all directions. Lace curtains, for instance, have frequently to be photographed for process work. Here, again, not only must special attention be given to the lighting, but they must be treated in such a manner as to bring out the pattern and design in

bold relief. This is accomplished by photographing them when they are suitably distended on stretchers, and placed under a very high top light only, with an absolutely black background, and this must on no account be brought close up to the fabric, as many suppose, and sometimes actually place in contact with the curtains.

For a background in work of this description there is nothing to equal black velvet, placed at least twelve to fifteen inches behind the fabric, and when such arrangements are carried out, and a slow transparency plate used with a very full exposure under a high top light, beautiful reproductions of the finest design and tracteries are possible of accomplishment.

In work of this description the faintest inequality in the lighting will be apparent when the negatives reach the printing stage, so that it frequently happens that some experience and previous test of which is the best portion of the studio to employ at a given hour of the day is required, so as to produce nice, even results that permit of good process blocks being produced.



THE FIRST USE OF BROMINE IN DAGUERREOTYPE.

BY MAJOR-GENERAL J. WATERHOUSE, I. S. C., IN "PHOTOGRAPHY."

HAVING had occasion recently to refer to Volume XIII of the *American Journal of Photography* for 1892, I was very much interested to find in it a series of papers by the editor, Mr. Julius F. Sachse, on "Early Daguerreotype Days," in which he brings forward evidence to show that bromine was first used as an accelerator in daguerreotype by Dr. Paul Beck Goddard, of Philadelphia, in December, 1839, about a year before Mr. John F. Goddard published his independent discovery in this country.

Mr. Sachse further claims for Philadelphia the honor of being the mother city of photography in America, and the birthplace of photographic portraiture, the bromo-iodized plate, and the instantaneous photograph.

The specific claims he makes on these points are:

1. That Joseph Saxton, of Philadelphia, made the first heliograph in America, October 16, 1839.
2. That Robert Cornelius, of Philadelphia, obtained the first picture of a human face by Daguerre's process, in the world, November, 1839.
3. That to Dr. Paul Beck Goddard, of Philadelphia, belongs the honor of the discovery of bromine as an accelerator, December, 1839.
4. That Dr. Paul Beck Goddard, of Philadelphia, was the first in the world to obtain an instantaneous picture by heliography, December, 1839.

Besides other claims of less general interest.

Considering that the daguerreotype process was only made known to the world in August, 1839, and that the first accounts of it appear to have only reached America in September and October, 1839, and, according to Mr. Sachse, were looked upon as a hoax by some of the leading spirits of the American Philosophical Society in Philadelphia, it is interesting to note how quickly the new process seems to have been tried, improved and turned to practical account, both in Philadelphia by Saxton, Goddard and Cornelius, and in New York, where it was immediately taken up and worked out in a scientific way by Professors J. W. Draper and Morse, of the University of New York. Although the Philadelphia men may have been first in the field, Draper's researches must have been almost contemporaneous with theirs, and what is of much greater importance, he published the results of his work at once, which Goddard and Cornelius did not.

With regard to the first two of the claims put forward by Mr. Sachse, there is not much to be said. An illustration is given at page 308, of the volume referred to, of the first picture taken by Mr. Saxton in October, 1839, with a cigar-box camera and burning glass lens, silver plates, an iodine box made from a Seidlitz powder case, with a hole cut in the lid to take the plates, and an equally rough mercury box. It is marvelously good for such an attempt.

Later on Saxton had the help of Cornelius, who was a lamp maker, in making up some plated metal, and this started Cornelius on making some apparatus for himself, and the first picture he took was his own portrait, running in front of the camera after he had got all ready. The exact date is not known, but it was in November, 1839, and a copy of it is appended to Mr. Sachse's paper.

The first publication of the use of bromine as an accelerator in the Daguerreotype process is universally ascribed, and, so far as we can see, quite correctly, to Mr. John F. Goddard, who was a science lecturer at the Adelaide Gallery, and seems to have been engaged by Beard, the holder of the Daguerreotype patent in England, to assist him.

The following is the letter in the *Literary Gazette* of December 12, 1840, in which the discovery was made known :

" VALUABLE IMPROVEMENT IN DAGUERREOTYPE.

" *To the Editor of the 'Literary Gazette' :*

" Sir,—Having been engaged for some time past in investigating the different means of preparing the plates for the action of light in photographic delineations of Daguerreotype, in the hopes of being able to render them more sensitive, the result of my experiments has been the valuable discovery, that when the bromide of iodine is used instead of the simple iodine this very desirable object is attained in the most extraordinary degree. So delicately sensitive are the plates, when properly prepared, that the faintest light acts upon them. Even on the dull, cloudy days of November, with a London atmosphere, if not too foggy, and there is sufficient light to produce a picture, it will, by a few minutes' exposure, be delineated. I have not had an opportunity of experimenting with bright solar light since I made the discovery, but from the experience I have had in the old process during the last summer, I have no doubt that with a clear summer sun in London the effects will be almost instantaneous. With the light of the ordinary gas, a picture of a plaster bust may be obtained in three or four minutes.

" I remain, sir, yours, etc.,

" JOHN F. GODDARD,

" Late lecturer on optics, etc., at the Royal Adelaide Gallery."

According to Mr. Sachse, Dr. P. B. Goddard was an assistant to the professor of chemistry in the University of Pennsylvania, and, being much interested in the results obtained by Saxton and Cornelius, he entered into communication with the latter, had a set of apparatus made up, and entered into a series of chemical experiments, in which it is said he was assisted by the celebrated chemist, Prof. Robert Hare. It is claimed for Goddard that he made the third Daguerreotype portrait, Cornelius having made the first two, and an account is given of the sitting. The exposure in the bright sunlight was about three minutes.

In the course of his experiments he discovered that bromine combined with the iodine would reduce the exposure from one-third to one-half within doors, while in the open air the exposure was almost instantaneous. He thus obtained a perfect specimen, which, as we shall see, was not publicly exhibited till January, 1842, when he described his method before the American Philosophical Society.

There seems, therefore, to be little doubt that Dr. P. B. Goddard was the first to make use of bromine as an accelerator, as will be seen from the following extracts quoted by Mr. Sachse, and to be found in Volumes I, II and III of the *Proceedings of the American Philosophical Society*, in the British Museum, though he and Cornelius kept the discovery a close secret, and made large profits in portrait taking at \$5 a sitting.

In these volumes there are notices of Daguerreotypes produced by Cornelius being exhibited at meetings of the American Philosophical Society held on the 6th December, 1839, and on March 6, 1840 (*Proceedings A. P. S.*, Volume I, pages 155 and 181).

The first notice of Dr. Goddard's work, or use of bromine, is in Volume II of the proceedings of the same society, page 144, in the report of the meeting of January 21, 1842:

"Dr. Goddard showed some specimens of photographic portraits made by the diffused light of a room, and by a peculiar process in which dibromide of iodine is used. This process he described, and stated that he had ascertained only to-day that a similar method had been presented to the French Academy, which, however, was in some particulars inferior to his own."

No details of the method are given, and it will be noted that this apparently first publication of Dr. Goddard's use of bromide of iodine was more than thirteen months after John F. Goddard had made known his discovery here.

At page 150 of the same volume, in the report of the meeting for March 4, 1842, we find further mention of Dr. Goddard's work:

"Dr. Goddard presented specimens of Daguerreotypes on a surface of gilded silver, and stated that the surface of iodide of gold was more susceptible to the Daguerreotype action of light than that of the iodide of silver; that the surface of the plate might be polished without injury before the action of the iodine, and that the lights came out better than on the silver surface."

Again, in Volume III, No. 27, for May, 1843, page 180, we find that in the course of a discourse on Moser's experiments on invisible photographic rays, Dr. Goddard "alluded to the first employment of bromine in the photographic process, and exhibited the first Daguerreotype specimen produced by means of it. It was made in Philadelphia by himself and Mr. Cornelius in December, 1839."

Referring to this plate and Dr. Goddard's early experiments already noticed, Mr. Sachse says:

"This is the first record of the employment of bromine in the photographic process. It was during this series of experiments with bromine that Dr. Goddard succeeded in obtaining several good views and portraits instantaneously in the open air, which were the first instantaneous pictures made by any heliographic process in the world." He goes on to say: "The application and use of bromine as an accelerator was kept a close secret by Goddard and Cornelius for about two years. It was this use of bromine, together with Cornelius' superior skill in polishing his plates, which account for the great beauty of his early Daguerreotype miniatures."

The secret was divulged in the latter part of 1841 by one of Cornelius' assistants, who went to New York, and it was only then, in January, 1842, that Dr. Goddard described his method with dibromide of iodine, as mentioned above.

Further on Mr. Sachse says: "In English and Continental text books upon photography the claim for priority in the use of bromine as an accelerating agent is usually accorded to one John Goddard, a London optician. That this is clearly an error is apparent from the above indisputable record. The honor for the first use of bromine as a sure and valuable accelerator, and the subsequent application to Daguerreotype and photography, without a shadow of doubt belongs to Dr. Paul Beck Goddard, of Philadelphia."

This statement is, however, scarcely borne out by the facts stated above. Priority of publication is generally conceded to be the first title to any honor that may be due on account of a discovery, even if it be patented. John F. Goddard gave his discovery of the use of bromine freely to the world, and, though it was immediately followed by other similar improvements made by Claudet, Fizeau, Gaudin and others, the discovery is universally recognized as Goddard's, even by Claudet himself, while Dr. Paul Beck Goddard, who, as there seems to be little doubt, really was the original discoverer, preferred profit to honor, and has remained in absolute oblivion till rescued by Mr. Sachse.

Nevertheless, it is certainly a very remarkable coincidence that two men of the same name in quite different parts of the world should have hit upon the same discovery quite independently, and within a few months of each other.

As regards Mr. Sachse's claim on behalf of Dr. Goddard to have produced the first daguerreotype portraits instantaneously, it may be noted that Dr. J. W. Draper, who had been engaged in photo-chemical researches for many years before Daguerre's process was brought out, and was certainly one of the first to experiment with it very soon after the details reached America, and is, moreover, also credited with the first

application of Daguerreotype to portraits, has distinctly stated that his first portraits were taken in 1839, and with exposures of twenty to ninety seconds with iodized plates (*Scientific Memoirs*, page 215, or *Philosophical Magazine*, September, 1840). That he had attained some skill in the art early in 1840 is shown by the following extract from the *Philosophical Magazine*, June, 1840, page 535:

"Professor Draper, of the University of New York, informs us in a note, dated March 31st, that he has succeeded during the winter in procuring portraits by the daguerreotype, and that they have all the beauty and softness of the most finished mezzotint engraving, and only require from twenty to forty-five seconds for execution." There is no mention of bromine being used in conjunction with iodine in any of Professor Draper's papers on daguerreotype.

It may be noted, too, that Robert Hunt, in the first edition of his "Treatise on Photography," published in 1841, gives Draper the credit of the first application of daguerreotype to portraits, and the process was published in the *Philosophical Magazine* for September, 1840. Here, again, it is evident that the man who published his process has reaped the credit, which seems in any case fully due to him, because Draper's work must, as stated above, have been very closely contemporaneous with that of Cornelius and Goddard.

Sir John Herschel was one of the first to work with silver bromide and to recognize its greater sensitiveness to the less refrangible rays of the spectrum (*Philosophical Transactions Royal Society*, February, 1840).

So far, we have not been able to trace other records of the early days of daguerreotype in England, but in any case these must be reserved for a future paper.



THE GOVERNMENT BUILDING AND RIDEAU LOCKS.

THE view shown on page 339, over the above title, is so remarkable for what may be termed its qualities of microscopic detail and sharp delineation of form and feature, that its author, Mr. H. M. Topley, of the Topographical Survey Bureau, Department of the Interior, Ottawa, was asked to give a synopsis of its production, which is as follows :

"There are all the colors of the chromatic scale represented in this view, from the deepest green to the lightest yellowish green ; also from the darkest red, which is to be seen in the Lock gates, to the darkest black in the piles of coal. The water is dark brown, being covered in parts with yellow sawdust on the surface. The detail in this picture is remarkable, so I have been told by American professors. It will be noticed that every particle of coal can be distinctly outlined, and that the markings in the masonry of the gray limestone of the locks, to the masonry in the towers, are particularly sharp, the latter being a quarter of a mile distant. The picture was taken with a Dallmeyer lens, 16 x 18, stop about $F/16$. The plate was exposed through a yellow screen placed between the lenses. The time of exposure was five seconds, and it was taken at 4.30 P. M. in the month of June, upon an Edwards isochromatic plate, and developed with pyrogallic acid."

The reproduction is from a plate made by the Baltimore Engraving Company for use in the "International Annual," from which it was, however, crowded out ; and while it is an excellent translation of the original photograph, much has, of necessity, been lost in the great reduction of the print.

SOCIETIES

THE Mobile Camera Club was disbanded last September, and, shortly afterwards, the Association Camera Club of the Y. M. C. A. was organized with the following officers: President, E. W. Faith; Vice-President, Charles Shawhan; Secretary, Richard Hines, Jr. The new Club possesses fine quarters in the Association Building, and the prospects of its success are very good.

THE Photographic Section of the Hartford Scientific Society has elected the following officers: C. R. Nason, Chairman; Miss H. M. Olmsted, Secretary; Miss E. L. Williams, Treasurer.

MR. C. A. ZIMMERMAN delivered a lecture last month on "Composition and Lighting of Landscapes," at the rooms of the St. Paul Camera Club. The lecturer illustrated his discourse with blackboard sketches, and gave valuable instruction on the blending and harmony of shading. There was a large attendance present, and many members brought negatives for criticism by Mr. Zimmerman. An arrangement has been made with the International Exchange for the interchange of lantern slides.

ABOUT twenty-five of the leading amateur photographers of Sioux City, Ia., have organized a new Camera Club, and at a meeting on October 10th the following officers were elected: E. R. Kline, President; Charles R. Olmstead, Vice-President, and D. B. Henderson, Secretary and Treasurer. Demonstrations of the various processes and a series of lantern slide exhibitions will form part of the season's programme.

THE Ninth Annual Exhibition of the Toronto Camera Club will be held on December 5th to 9th inclusive. In open classes a gold medal will be awarded to the best picture in the exhibition, and there will be silver and bronze medals for enlargements and lantern slides. Silver and bronze medals, for second and third prizes, respectively, will be given.



AMATEUR PHOTOGRAPHY, by W. I. Lincoln Adams, published by the Baker and Taylor Company, has reached its fifth edition, and appears completely revised and enlarged in a new dress, and with numerous illustrations. It is handsomely printed on coated paper, and constitutes a valuable handbook for the amateur photographer. The author's long acquaintance with the subject of which he writes is an ample guaranty of reliability.

THE CAMERA AND DARKROOM having combined with itself the *Pictorial Photographer*, appears as a monthly journal devoted to the interests of amateur photographers, and the September number, the first under the new management, is bright and interesting. Subscription price, \$1 per year.

THE BRITISH ISLES THROUGH AN OPERA-GLASS, by Charles M. Taylor, Jr., is a handsome octavo volume of 320 pages, printed on deckel-edged paper, bound in dark cloth, and illustrated with a map and forty-eight half-tone illustrations from photographs by the author.

The book is an interesting and instructive running description of the author's travels, and its numerous illustrations serve to add interest to the entertaining story. Published by George W. Jacobs & Co. Philadelphia.

THE INTERNATIONAL ANNUAL of Anthony's Photographic BULLETIN, Volume XII, for 1900, is now so far advanced toward completion as to warrant us in predicting a volume fully equal, both in point of interest and value and in pictorial excellence, to any volume that has preceded it. Volume XII will contain a large number of original articles by eminent photographic authorities and experts from various parts of the world, and its text and full-page illustrations will cover a wider field than ever. The frontispiece consists of a beautiful photograph from negative by Hill, of Pasadena, Cal., and shows a typical view of southern California scenery.

The "Annual" will be published in November, as usual. E. & H. T. Anthony & Co., publishers. Price, paper covers, 75 cents; postage, 15 cents extra. In cloth covers, \$1.25; postage, 20 cents.



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PORTRAIT STUDY.



Portrait Study by A. Moreau.

PORTRAIT STUDY.

ANTHONY'S Photographic Bulletin.

EDITORS:

PROF. CHARLES F. CHANDLER, PH.D., LL.D.

W. I. SCANDLIN.

VOL. XXX.

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No. 12.

VALEDICTORY—1899.

WITH this issue of the BULLETIN we bid farewell, not alone to the year 1899, with all its records of progress and memories, both pleasant and sombre, but to the Eighteenth Century of the Christian era, whose progress has been the most wonderful of all toward the advancement of science, art, literature and all that goes for the higher development of mankind; and, in entering into the new century, a feeling of awe and wonderment is not to be entirely repressed as we view the possibilities that lie hidden, in its yet unwritten story, for our own art of such comparatively recent birth.

A few short years ago, a space of time easily within the memory of many living men to-day, and photography was not known; electricity, a kindred science, which in time is probably destined to become an important aid to photography, was still undeveloped; and yet within the narrow limits of a generation's existence, behold the position of these two branches of our scientific growth.

We owe a debt of gratitude to those indefatigable workers in all fields of labor whose efforts have aided in giving us the advantages the world enjoys to-day. In what way may we best cancel this debt to the past and hand down to posterity a legacy at least equal in value to that which we receive from our progenitors? The answer to this question seems to lie wholly in the direction of individual effort, in personal advancement, and a keen and ever-abiding sense of responsibility, each for his own work, in whatever portion of the coming century we may live to enjoy. Our art may be fostered and advanced by our own personal love for it and loyalty to it; and in giving it our hearty support we are strengthening our own connection with it and making more stable our own position in the community of which we

form a part. The growth of a nation is simply the result of the individual growth of its citizens, and the progress of the world during the century passing into history is only the result of individual effort in the aggregate. The opportunities for the use of photography were never so varied as now; its field of usefulness is widening year by year, and when we venture to look forward to the end of the coming century and to imagine, in view of what has been accomplished in the past, its scope and development at that time, we are simply appalled at the magnitude of the undertaking. As new methods and applications have been worked out, step by step, in the past, however, they will still continue to grow in the same way, and it is impossible to predict whose name from our own ranks may next be plucked from the obscurity of a quiet, industrious, work-absorbed existence and placed by coming history beside those already famous. Application to the petty details of our surroundings, close attention to the work of the present moment are the keynotes to success in any work of life, and no more so in any one than in photography.

Our profession is in most cases our own by choice, and in all cases it is our means of livelihood. We must then cherish it and take pride in it and, looking backward at its short history already written, lend our earnest support and aid in keeping bright its record and adding to its laurels in so far as we ourselves may, so that the historian of the twentieth century may truly say that the progress of the art of photography has been one of steady rise and development from its inception.

OBITUARY.

THE death is reported on the date of October 31st of John N. Byron, a well-known photographer of Albany, New York, of which city he had been a resident for the past thirty years. Mr. Byron was born in New York City, and died at the age of seventy-one years.

WALT H. STILLMAN, of Troy, one of the best known amateur photographers in this section of the country, died at his home on the 8th of November. He was for many years prominent in the State Militia, and was very popular in photographic circles.

B. F. REIMER, an old-time daguerreotypist and photographer of Philadelphia, died in that city in the early part of November at the age of seventy-three years. Mr. Reimer was for many years located on North Second street and on Arch street, and was well known to people from all parts of Pennsylvania. He was strongly identified with the early anti-slavery movement, and was an active and sincere friend of the colored race.

Items of Interest



MAJOR-GENERAL WATERHOUSE, whose investigations in photographic theories and manipulations have been so extensive and productive of so much good, is now actively engaged in following up his experiments on the sensitiveness of ordinary metals to light, and expects to make public some of the results of his work at the Traill Taylor Memorial Lecture, which he is shortly to deliver, and which will be waited for with interest.

AN undertaking is now on foot in Tokio, Japan, that will open up to the art world a vast treasure, which, up to the present time, has been carefully kept from the eyes of mankind in general, and to which access has only been possible in rare cases, and under strict surveillance. According to recent reports, however, arrangements are under way to publish a set of about one thousand photographic pictures of the various art treasures contained in the many Buddhist temples of Japan. It is planned to publish these works in twenty volumes, each to contain fifty choice illustrations of the most beautiful examples of painting, sculpture, carving and lacquering contained in these vast storehouses, and it is said that the first volume is already published. A work of this kind, if properly carried out, will be of great value to the art student of the present day, and of all time to come.

AN innovation has lately been introduced in the method of furnishing cartridge films for use in daylight cameras, by which they may now be obtained for many of the smaller sizes in cartridges containing two films only, instead of six or more, as formerly. This will be recognized as a distinct advantage to those who develop their own exposures, as it will do away with one of the strongest objections that has been urged against film photography by permitting development without waiting for a long roll of film to be exposed. The American Camera Manufacturing Company is among the first to make this announcement, and their new American rollable film, in sizes $3\frac{1}{2} \times 3\frac{1}{2}$, 4×5 , 5×4 , and 7×5 , are now furnished in this way.

THE *Revue Suisse de Photographie*, of Geneva, Switzerland, announces a competitive exhibition of enlarged prints on paper, to take place in February, 1900. The competition is international, and is

open alike to amateurs and professionals. Full particulars may be had by addressing the Management of *Revue* (40 rue du Marché, Genève).

As an instance of one of the many applications of photography to existing conditions, attention has lately been called to the increasing use of the pictorial postal card, which, while it has for some time been growing in favor in this country, has reached enormous proportions on the other side of the Atlantic.

It is reported on the best of authority that in Germany alone as many as one hundred new designs are published daily, which, if only printed in editions of one thousand each, would amount to one hundred thousand cards per day, or over thirty millions per year.

Their introduction has been the means of promoting business along other lines as well, since it is now a well-developed hobby with many to make collections of these cards, which are arranged in special albums prepared for their reception.

This mania for collecting is said to be rivaling that which has so long been familiar to us all, the postage stamp collection, and we should think it would be quite as interesting and instructive.

STILL another instance of the value of photography is to be found in its application to the production of maps, diagrams, and information concerning important events transpiring in distant lands. It is said that news telegraphed to England from South Africa, a distance of about seven thousand miles, is received within two or three hours of sending, and that the daily papers are furnishing their readers with skeleton maps and diagrams made by photographic processes from the official maps of the War Office, drawn to scale and accompanied by a scale of English miles, all of which are produced and printed within a very few hours of the actual happening of the events described. Without photography this would be impossible.

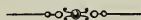
THE advantage that may sometimes be gained by applying an old-time method to new conditions is to be seen in the resurrection of the Daguerreotype process, which has lately made a decided hit in some quarters, and has proven to be a drawing advertisement for more than one enterprising photographer; and now comes the statement that one of the leading men of a large western city has introduced into his gallery with great success the cuprotype, or copper process print. All of which goes to prove that the better informed a man is in his business, the better able is he to succeed.

It would probably be difficult to estimate the number of photographers, both professional, semi-professional, if the word may be used, and amateurs, who had prepared to photograph the recent shower of meteors, and whose efforts were rendered futile by the heavy clouds

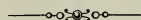
that almost completely covered the sky both nights of the looked-for visitation. Certain it is, however, that a wide interest is being stimulated in astronomical photography, which will be of great advantage to those who practice it, and from which great things may be expected in its future development. The amateur has probably done more for the advancement of the art or science in which he is interested *con amore* than have those who follow it as a profession, and astronomy is to be congratulated on having enlisted the support of the amateur photographer to the extent it has.



THE Second Annual Salon of the Philadelphia Photographic Society just closed in the Philadelphia Academy of Fine Arts was, like its predecessor, a thorough success. The salon contained in all three hundred and fifty exhibits, embracing the choicest examples from at home and abroad, the English workers being represented in part by such well-known names as A. Horsley Hinton, Walter Barnett, Harold Baker and Craig Annan, while in the American school were, among many others, F. Holland Day, Mrs. Kasebier, Miss Frances Benjamin Johnston, C. H. White and Miss Zaida Ben-Yusef. The exhibition of such work as was hung cannot but be of importance, not only to the members exhibiting, but to the visiting public as well, and the organizers are doing a work of public benefit in bringing them within the reach of all. The public taste is educated, and the constant demand for better work at the hands of the portrait photographer may be easily traced to the influence of these salons and exhibitions.



THE Fourth Annual Exhibition given under the auspices of the *Youth's Companion* was opened on November 1st, with a marked increase in the number and excellence of prints entered over former exhibits. There were last year about seven thousand pictures exhibited, while the number this year reaches nine thousand eight hundred. The judges were selected with great care, and the awards of prize and honorable mention were numerous.



It is pleasant to note that Mr. Alfred Stieglitz and Mr. Dudley Hoyt, both of whom are well known to readers of the BULLETIN, succeeded in capturing the much-coveted royal medal at the forty-fourth exhibition of the Royal Photographic Society of London. This, we believe, is not a new honor to Mr. Stieglitz, but is Mr. Hoyt's first experience of the kind.



All copy for January issue must be in our hands not later than December 15th.

SOME PRACTICAL FORMULAS FOR LANTERNISTS.

REV. F. C. LAMBERT.

THE long-suffering editor of many a photographic journal is yearly troubled during the lantern season by a continuous flow of questions which any average person who can work out a simple rule-of-three sum in arithmetic ought to be able to answer for himself, and this in less time than would otherwise be spent in writing a letter to the aforesaid editors. Here are a few of the usual questions: "What is the size of the picture on the screen that I can get with a 10-inch focus lens in a room 40 feet long?" "How far from the screen must I put my lantern with a 9-inch lens so as to get an 8-foot picture on the screen?" "I want to get a 6-foot picture in a room 24 feet long—what should be the focus of the lens?" "How can I ascertain the focal length of my lantern lens?" These are fair samples of questions which the practical lanternist is frequently meeting with.

If the practical man will therefore give us his attention for a few minutes, follow us in this note, and then cut out and paste inside the lid of his lantern case the formulas here below given, he never ought to find the least difficulty in solving for himself any of these optical questions. At the risk of being thought tedious, we shall enter very fully into every step, and confine ourselves to simple arithmetic.

In the accompanying diagram we show three things, viz., the lantern slide, the screen picture and the lens between these two. For all practical purposes, we may assume the lens stop or diaphragm slot to be the point from which our measurements are taken. It will be convenient to suppose that the business part of our lantern slide is 3×3 inches.

We shall find the following abbreviations convenient:

f —The equivalent focal length of the lens (in inches).

u —The distance of lens to screen "

v — " " " slide "

p —The width of picture on screen "

s — " " slide (viz., 3×3 inches).

m —The magnification.

Observe that m , the magnification, is the proportion which p , the screen picture, bears to s , the size of slide.

But we note that p and s are the bases of the two similar triangles, which have their common vertex or meeting point at the stop of lens. Thus, we get the evident relationship that p is to s as u is to v . This is a very useful thing to remember, and we may conveniently express it in the form of a fraction. Thus,

$$\frac{p}{s} = \frac{u}{v} = m \text{ magnification.}$$

For example, if a 3-inch slide shows as a 6-foot (72-inch) picture on the slide, then $\frac{72}{3} = 24 = \text{magnification.}$

1. As so much turns upon the focal length of the lens, it will be convenient if we first show how to find the equivalent focus of the

lens. Take an old negative or slide and with a pin point rule straight lines from opposite corners. This gives us the center of the slide. Now, on each side of this central point make a short vertical cut through the film with the point of a knife blade. These two knife cuts should be equidistant from the center point, and it is convenient, but not essential, that they should be some definite number of inches apart. By way of example, let us suppose we take them each 1 inch from the central point so that the two marks are 2 inches from each other. We now put this slide in the lantern, and, using a duly long strip of white paper, we focus as sharply as possible these two knife cuts and at the same time arrange matters that they shall be some even number of inches apart. It will be convenient to pin up an inch tape measure along the middle of the screen and then move the lantern to and fro until our two marks are just 10, 12, 14, 16, or some other multiple of 2 inches apart. We can in this way, at a glance, see the magnification. Thus, if our 2-inch marks on the slide are 18 inches apart on the screen, our magnification is $\frac{18}{2} = 9$ times. If there are 24 inches on the screen, our magnification is $\frac{24}{2} = 12$ times, and so on.

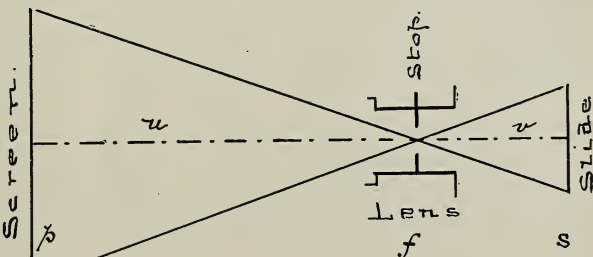
Having arranged matters so that we get some such exact magnification, our next step is to take our tape measure, or a piece of string, and measure the distance between the slide and its picture on the screen. It is now an easy matter to calculate the focal length of the lens. This is given us by the formula $f = \frac{m(u+v)}{(m+1)^2}$. Once for all, we will ask the reader to take for granted the formulas as being correct, and let us translate them into words for him.

Thus, add together the "lens to screen" and "lens to slide" distance, multiply this by the magnification. Then divide the result by the magnification, plus one, multiplied by itself.

Example. Suppose our 2-inch mark on slide is magnified to 18 inches (*i. e.*, the magnification is eight times) and that the distance between screen and slide is 9 feet (*i. e.*, 9×12 , or 108 inches), we thus carry out the rule. Multiply screen to slide distance 108, by magnification 8 and divide the result by the magnification, plus one, multiplied by itself, *i. e.*, 9×9 . Thus,

$$f = \frac{m(u+v)}{(m+1)^2} = \frac{8 + 108}{9 \times 9} = \frac{32}{9} = 3\frac{4}{9} \text{ inches.}$$

Now, in order to verify this result, we shall be wise in making a second observation. Suppose, then, that we rearrange matters so that our 2-inch mark is magnified to 18 inches, *i. e.*, the magnification is



now 9 times, and suppose that the slide to screen distance is now 10 feet (120 inches). Then

$$f = \frac{9 \times 120}{10 \times 10} = \frac{108}{10} = 10\frac{4}{5}.$$

We may thus conclude that, probably, the focal length of this lens is between $10\frac{3}{5}$ and $10\frac{4}{5}$, or we may take $10\frac{3}{4}$ as being sufficiently correct for our present purpose.

2. But suppose we are about to purchase a lens, and we require to know what should be its focal length to give us, let us say, a 6-foot picture in a 30-foot room? Two little points must not be forgotten. First, the stand for our screen will take up some room—let us say it cuts off 2 feet. Then we must allow a little space to get round (behind) our lantern—say that this needs 3 feet from the wall of the room to the lens. These two deductions have cut down our lens to screen distance to 25 feet. The formula $f = \frac{s \times u}{s + p}$ is required.

This tells us to multiply the slide size by the lens to screen distance and then divide the result by the screen picture, plus slide size. In the present case s is 3 inches, u is 25 feet, or 25×12 inches, and the picture p is 6 feet, or 72 inches.

$$\text{Thus } f = \frac{s \times u}{s + p} = \frac{3 \times 25 \times 12}{3 + 72} = \frac{3 \times 25 \times 12}{75} = \frac{3 \times 12}{3} = 12 \text{ inches.}$$

Therefore, as we cannot get more lens to screen distance than 25 feet and our picture must not exceed 6 feet on the screen, its focal length must not exceed 12 inches. But, of course, a lens of less focal length, say 10 inches, would, from this same standpoint, give us a picture, roughly, $\frac{10}{12}$ of 6 feet, *i. e.*, 5 feet. Or if we moved this lens nearer the screen than 25 feet we could get a 6-foot picture if required.

3. We may now suppose that we have bought a lens and measured its equivalent focal length. Our next step will be to ascertain what size of picture it will give us at different distances from the screen.

It is easy to rearrange our last formula to this form: $p = \frac{s(u - f)}{f}$.

Or, putting this into the form of a rule, it runs thus: From the lens to screen distance u subtract the focal length of lens f and multiply the result by the slide size. Then divide this by the focal length.

An example will make this quite clear. For instance, suppose we have a 9-inch lens, and it is 25 feet (*i. e.*, 25×12 inches) from the screen, thus

$$p = \frac{s(u - f)}{f} = \frac{3(25 \times 12 - 9)}{9} = \frac{25 \times 12 - 9}{3} = 25 \times 4 - 3 = 97 \text{ ins.}$$

But if we move our lens so that it is now 20 feet from the screen, then

$$p = \frac{3(20 \times 12 - 9)}{9} = \frac{20 \times 12 - 9}{3} = 20 \times 4 - 3 = 80 - 3 = 77 \text{ ins.}$$

And if we move it again to bring it 15 feet from the screen,

$$p = \frac{3(15 \times 12 - 9)}{9} = \frac{15 \times 12 - 9}{3} = 15 \times 4 - 3 = 60 - 3 = 57 \text{ ins.}$$

In this way it will be only a matter of a little patience and simple arithmetic for anyone to construct for himself a table for each lens, showing size of picture for any distance between lens and screen.

4. Another question often arises in actual practice, viz.: At what distance from the screen must we place the lens so as to get a certain size of picture?

For this purpose we should rearrange our formula thus :

$$u = \frac{f(p-s)}{s}$$

—that is to say, from the size of the screen picture subtract the size of slide, then multiply the result by focal length of lens. Finally, divide this by size of lantern slide. An example will make this clear. Suppose we are using a 12-inch lens and we want an 8-foot (96-inch) picture, where shall we put our lantern? Thus,

$$u = \frac{f(p-s)}{s} = \frac{12(96-3)}{3} = 4(96-3) = 4 \times 93 \text{ inches} = 31 \text{ feet.}$$

5. One other case yet remains. Suppose the position of the lantern is fixed—i. e., it cannot be nearer or further away than, let us say, 27 feet from the screen—we can only use a 9-inch focus lens and we wish the picture to be 5 feet (60 inches). Once again we rearrange our formula

thus: $s = \frac{p \times f}{u-f}$. That is to say, we must multiply the screen picture by lens focus and divide this by the lens to screen distance less the lens focus. Or in the case supposed above,

$$s = \frac{p \times f}{u-f} = \frac{5 \times 12 \times 9}{27 \times 12 - 9} = \frac{5 \times 12}{3 \times 12 - 1} = \frac{60}{35} = 1\frac{2}{5} = 1\frac{5}{7} \text{ inches.}$$

We must therefore make our slide pictures of this size. But if we have a 6-foot picture we may have our slides a little larger. Thus,

$$s = \frac{p \times f}{u-f} = \frac{6 \times 12 \times 9}{27 \times 12 - 9} = \frac{6 \times 12}{3 + 12 - 1} = \frac{72}{35} = 2\frac{2}{5} \text{ inches.}$$



PROCESS APPLIED TO DECORATIVE METAL WORK.

BY FRED. H. DAVIES.

[Written for "The International Annual," and received too late for publication.]

IT is a matter for surprise that the facility with which designs can be transferred and etched in metal has not tempted amateur and other workers to utilize process as a means of producing decorative work in brass or copper.

The additional outfit for the work is not costly, all that is absolutely necessary being an actinometer, a reversing mirror or prism, and a screw-pressure printing frame.

The actinometer can be easily made out of a quarter-plate printing frame and a few strips of tracing paper.

A piece of selected plate glass, silvered on the surface, and costing but a few pence, may be set in a box at an angle of 45 degrees, and will make a mirror sufficiently accurate for most purposes, although, of course, an optically ground glass is the correct thing. It is very important, however, that the angle be exact.

A screw-pressure frame can be purchased in the smaller sizes for a few shillings, or it can be made by any one accustomed to handling tools. It is, however, necessary to have a thick piece of plate glass for the front, as the pressure from screws is very great.

Finger plates, bases for electric pushes, escutcheons, etc., can be easily made in either copper or brass, and the etched design may be afterwards enriched by repoussé work, if desired.

The design should be drawn in the blackest of inks, and copied through the mirror in the usual way. Intensification is often an advantage.

From this reversed negative a positive must be made by contact, using a process plate, and from the latter the image is transferred to the metal.

The metal to be coated with the sensitive coating should be thoroughly cleaned and polished and quite free from grease. A whirler is of great service in coating.

A glance through the formulas in "The International Annual" will reveal many suitable for line designs, the author preferring the enamel resist, despite its alleged unsuitability for anything but half-tone work. In the case of brass, however, if an enamel resist be used, it is necessary to make it as tough as possible. The addition of a little chromic acid and rock sugar will be found of advantage for this purpose.

After development, which is assisted by adding a little violet aniline to the water, care should be taken not to burn in until all the moisture has gone from the surface. The plate may, with advantage, be placed in the sun to dry, as this tends to render the resist more perfect.

Blemishes may be taken out with an etching needle, or by painting over any defective spots with etching ink. In case it is necessary to do this, after etching has taken place, it must be remembered that, especially in the case of brass, it is unwise to heat the metal more than absolutely necessary. With care, a design can be etched to sufficient depth without the necessity of rolling up.

If it is desired to fill in the design, a good quality of sealing-wax of the color required should be mixed with a small proportion of resin, and the lines filled in. Apply the heat very gradually, and do not allow to boil. The plate may then be cleaned down with pumice (or charcoal, if black wax be used), and finished off with rotten stone and whiting.

Another method, dispensing with camera altogether, is to draw the design boldly on very transparent, tracing paper, and use this as a negative in front of the coated metal. The author has made very successful embossing plates in this manner.

All this, however, is only a suggestion. There are many good text-books published on process work, which the photographer would do well to study before embarking on the subject of this paper. There is no doubt, however, that there is a considerable field—almost, as yet, untrodden—for process work in the direction of decorative metal work.

LANDSCAPES.

BY HENRY DIETRICH.

IT seems as if the landscape branch of photography was at present at low tide. Is there any reason for this, and if so, what? The professional photographer will tell you very assuredly, that "there is no money in it," and he sticks to his favorite choice—portraiture. We have to acknowledge, that he is right to some extent. Who will buy landscapes or views, no matter by what name they are called, except the traveling public from foreign countries, who make selections and purchase them as novelties, or matters of record, in remembrance of this or that city they pass through? Even then, the views so purchased generally consist of prominent public and private buildings and cloud-penetrating sky-scrapers. The only so-called landscape photographer who is actively engaged is the man who, with camera and tripod, goes from house to house in the suburbs of the larger towns, soliciting orders. Now and then he is fortunate enough to catch an order, but pictures of this kind are, of course, only calculated to suit the particular taste of the individual whose house is taken, and are mostly made according to instructions. They are not intended for publication, and actually should not be classified as landscapes. The amateur photographer is, therefore, almost the only one we have to look to for a supply of that style. But here again we meet a stumbling block, for, with probably a very few exceptions, he is not provided with the necessary apparatus and appliances for large work, and, aside from this, it is not his intention to place his pictures on the market. He will simply make a few copies for friends, and that is all. At the time when stereoscopic views were predominant, it was different, but these, as we all know, were limited in size. Admitting that there is no market at present for landscape pictures, and no prospects in the present state of affairs, how can a demand be created? Twenty-five years ago the public in general was satisfied to get a picture of even indifferent scenery, brilliantly lighted in black and white. Artistic effect was not questioned as long as the landscape was there and could be recognized as such. But times have changed. The artistic taste of the public has been cultivated, and we have to produce something more effective, more artistic, as an inducement to purchase. Our country is so rich in the grandest and most beautiful scenery, that there is no lack of material, if properly selected by the artist's keen eye. Such pictures would find hundreds of individual purchasers, particularly when mounted on the handsome and effective mounts manufactured at present in comparison with the plain white cardboard of olden times. A large market could also be created for publishing purposes, for the book trade, etc. And there is still another style to be earnestly considered, a style that would certainly find favor with the public, even if the price should be a little more expensive. If such landscapes in their various sizes are printed on albumen paper, and are then colored, they will compare favorably with the best original water-color sketches or oil paintings. But they should be taken in

hand by proper persons on y. If color is daubed on the picture indifferently and without judgment by persons, who do not know how to handle a brush or apply a color, an abuse, I regret to say, which is being perpetrated too frequently, we, of course, cannot expect a work of art, not even a picture worth keeping, but let a skillful artist do it and we will have a landscape that is worthy to adorn the walls of our parlor, and to rank with any of the best works of art.

PHOTO SCULPTURE.

BY F. HANSEN.

SINCE we have been enabled by certain processes, differing more or less from each other, to chemically produce relief-photographs, attempts have been made by many to improve this prospective field of photographic activity.

The latest published very ingenious process, differing considerably from former methods, admits the production of photo relief-portraits of superior qualities in a mechanical way.

This process is in the hands of the Selle Photo Sculpture Company in Berlin, and is based on the application of the "kinematograph." A series of views is made with this instrument, which, by an ingenious arrangement of illumination, records the several relative views of the model, which views are afterwards used for the production of the plastic form.

The sitting for such a photo sculpture is made in the studio of the Photo Sculpture Company in the following manner: The model is seated on a chair, surrounded by a semi-circular screen, on which are fastened six electric lamps, hidden by some blue drapery. On moving this screen forward by a mechanical arrangement, the light divides the head of the model, over which it passes, into a number of various shadings, and the apparatus fixes the portrait in each phase of the changing illumination. While it appears as if only a shadow passed over the head of the sitter, the kinematograph will make from forty to fifty views in three to five seconds.

These silhouettes are correspondingly enlarged, fastened on cardboard and carefully cut out. When pasted on top of each other in rotation of the series of views as taken, a relief will result with a step-like structure. The interruptions are then filled out with wax, clay or other suitable material, to round off the relief. The relief so obtained can be transformed into bronze, terra cotta, plaster of paris, and even to marble, and portraits are thus obtained of an astonishing likeness.

This process, it cannot be denied, is still pretty complicated, but there is no doubt that it will exercise in the coming century the same influence upon sculpture as photography has done in the past upon artists and their paintings.

It takes from three to four days to finish a photo sculpture, and the present price for one relief is 300 marks.

Translated by
HENRY DIETRICH.



PHOTOGRAPHED BY A. MORENO.

PORTRAIT STUDY.

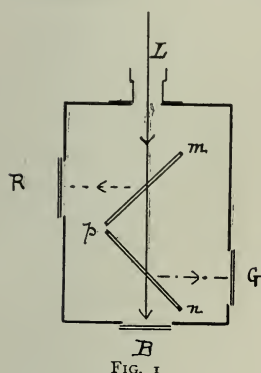
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ENGLISH NOTES.—RECENT ADVANCES IN THREE-COLOR PHOTOGRAPHY.

By F. C. LAMBERT.

[Abstract of a paper by Mr. Sanger Shepherd at the Camera Club, London, October 5th.]

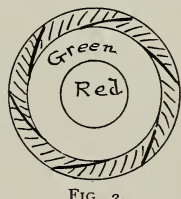
THE lecturer explained that any color of Nature may be adequately imitated by mixing three suitably chosen primary colors. In brief, his most recent method was as follows: A box-like camera with lens is filled internally with two transparent plates of plate glass. Seen in section in the accompanying diagram, $p\ m$, $p\ n$. These are so placed that they have a common edge at p . They are at right angles



to each other ($m\ p\ n$ being a right angle), and also the central axis of the lens meets each of them at 45 degrees. Light passing through the lens L towards B first meets with the glass $p\ m$. Part of the incident light is reflected towards R . Part passes through $p\ m$. This shortly meets the second mirror glass $p\ n$, and a part is again reflected towards G , while the remainder passes onwards towards B . (Suppose for a moment that half the incident light is reflected in each case. If then we represent the total strength passing through L as 100, then 50 is

reflected to R and 50 passes through $p\ m$. Again, at $p\ n$, 25 passes to G and 25 to B . These random numbers are only given to explain the use of the mirrors.) Thus, by one lens and at the same moment of time, it is possible to get three images of an object in one and the same camera. The reader doubtless is familiar with the general principles of three-color methods, and, therefore, but needs reminding that what is required is to take one negative through a red glass screen or color filter, a second through a green glass, and the third through a blue or violet screen. From these negatives are made three positives, which are then colored. Thus, the print from the red screen negative is printed in the color complimentary to red, being a bluish green. That from the green screen negative in pink a bluish red or pink, and that from the blue-violet screen in a lemon-yellow. The way

Mr. Shepherd produces his positives in color is as follows: A transparent celluloid film coated as in the ordinary way with gelatine bromide of silver emulsion is immersed in a dilute solution of potassium bichromate and dried in the dark. It is then placed in contact with one of the aforesaid negatives, but the celluloid side of the film is in contact with the film on the glass-supported negative. Thus, printing takes place through the substance and thickness of the celluloid support. Exposure to daylight shows a visible image. When sufficiently printed, the film is immersed in warm water (as in the ordinary carbon process). This dissolves away those parts of the bichromated film not acted upon by light, and therefore still soluble, but where light has passed through the negative, the bichromated film is insoluble and not affected by the



warm water. The result is a positive picture in gelatine, containing bromide of silver. We now immerse this in an ordinary hypo fixing bath, which dissolves out the silver bromide and leaves us a transparent positive gelatine relief.

The next step is to color this by soaking in an aqueous solution of a suitable dye. In this way we make three gelatine positive pictures in pink, yellow and greenish blue. These are then carefully fixed, one on the top of the other. On looking through the three together we get the colors of Nature reproduced with a fidelity which is quite startling. In this way are made lantern slides which can be shown in any ordinary single lantern. Hitherto, one serious difficulty has been that of correctly adjusting the color screens of the camera to the sensitiveness of the orthochromatized plates. Here Mr. Sanger Shepherd steps in with a device as ingenious and efficient as it is simple in principle. So much so, that when told, every reader will mentally exclaim: "Why didn't I think of that?" (Echo answers, "Why?") The problem is to strain out, in controllable proportions, as it were, certain colored rays passing through the lens. How it is done is shown in Figure 2. A circular disc of red glass is cemented to a larger circular piece of green glass, which in turn is of size just to fit inside the lens tube and come close up to an iris diaphragm. In the diagram the space between the outermost and next circle is occupied by the partly closed iris diaphragm, the space between the inmost and middle circle is occupied by green glass, while the inmost circle is of red and green glass together. Thus, while the quantity of light passing through the red circle is fixed, one is able (by opening and closing the iris diaphragm) to adjust the quantity which passes through the green annulus.

GLEANINGS FROM GERMANY.

TRANSLATED BY HENRY DIETRICH.

INTENSIFICATION for *Line Negatives*.—To obtain the proper intensification of a negative, so necessary in photolithography, the intensifiers usually applied in photography are not sufficient, but the method with iodine and Schlippe's salt proves to be very useful. The gelatine negative is first treated with a solution of—

Iodine	1 gram
Iodide of potassium	2 "
Water	240 cubic centimeters

until it has taken a thoroughly yellow color, whereupon it is well washed and treated with a 1 per cent. solution of Schlippe's salt, which has been made alkaline with a little caustic potash. The yellow picture changes in this bath to a uniformly dark red. Finally it is well washed again.

To clean oil paintings, to be used for reproductions, the following method is very simple, and without the least danger of doing any harm to the picture: Take equal quantities of linseed oil and oil of turpentine, mix them, and apply with a rag of very fine old linen. This will clean thoroughly without touching the canvas. Alcohol cannot be recommended, unless it is desired to remove the varnish.

Durable Fish Glue Solution for the Autotype Process.—The chromated fish glue solution is not very durable, and, as its production takes considerable time, it is of advantage to keep it in such a state of dilution as will insure its keeping qualities and enable it to be chromated only in such quantity as necessary for use. The following process has proven to be reliable. Beat the white of eggs to foam and let this settle for twelve hours. The liquid is then poured off and prepared as follows:

Albumen.....	7 cubic centimeters.
Fish glue.....	7 “
Carbolic acid, 5 per cent.....	1 cubic centimeter.
Distilled water.....	14 cubic centimeters.

These substances are well mixed and filtered three times. A bichromate of ammonia solution, 1:10, is prepared and held in stock. Both solutions are durable. Shortly before use mix 4 volumes of the fish glue solution with 1 to 2 volumes of the bichromate solution and as many drops of ammonia as will cause the color to pass into a greenish yellow.

Lichtdruck Transfer Paper.—Prepare the following solution :

Emulsion gelatine.....	10 grams.
Fish glue.....	50 “
Albumen.....	25 “
Bichromate of potassium.....	5 to 8 “
Bichromate of ammonium.....	1 gram.
Distilled water.....	250 cubic centimeters.

Let the gelatine soak in 100 to 120 cubic centimeters of water, and then dissolve the chrome salts in the remaining quantity of water, adding the fish glue and the albumen. After the swelling of the gelatine it is heated, and the chrome-glue-albumen solution is added, with constant stirring. This solution is filtered and poured upon good strong paper, which has been previously fastened to a zinc plate. The paper is dried at 134 degrees F.; the printing is done in the shade; duration, 30 to 45 minutes. Wash in lukewarm water containing a few drops of ammonia, after which harden the print in the following bath:

Chrome alum.....	5 grams.
Sulphate of copper.....	20 “
Water.....	100 cubic centimeters.

In place of sulphate of copper some drops of sulphuric acid may be taken. To dry the hardened print, quickly put it in alcohol for a few minutes. The print, when dry, is blackened with a mixture of transfer and chalk color, and transferred to a grained zinc plate or stone. For chromo lithography this process is of great importance, and gives much better results than the asphaltum-photo-chrome process.

Action of Acids in the Developer.—The energy of developers of the present day depends very much upon the quantity and the nature of the alkali which is added. As an excess of alkali is often used to obtain very soft negatives, the tendency for the formation of fog is

greatly increased. This is remedied by an addition of bromide of potassium. But the developer is thus modified in the same way as if correspondingly less alkali had been taken. Nothing is gained, therefore, but a strongly alkaline developer, detrimental to the gelatine film and the fingers. It is always better to take less alkali and make a small acid addition. The latter produces no fog, tends to clear and gives a considerable density. The most suitable is citric acid in about a 10 per cent. solution. It is particularly applicable to the pyro developer, and it has here not only a clearing and retarding action, but also prevents the yellow coloration of the negative.

The Pigment Print Upon Colored Underground.—In the beginning of our experiments we produced this paper by mixing hot gelatine with vermilion and spreading this evenly upon a sheet of paper, hardening the same in alum after drying. This paper, being very brittle, had to be bathed in glycerine, which, with the excess of gelatine, gave the pictures a brilliant appearance; but the surface was too glossy. To bring the grain of the paper into effect, we have now applied the following technical methods: Fifty grams of best clear gelatine are dissolved in 500 cubic centimeters of water in the water bath, and, as soon as the gelatine has been completely dissolved, 10 cubic centimeters of a 6 per cent. chrome alum solution are added, drop by drop, with constant stirring, so that the whole has a bluish homogeneous color. This bluish solution, if kept in a well corked bottle, will remain good for a long time. For use it is made liquid in the water bath. A little of this is then poured into a warm mortar, color is gradually added in small portions and finely rubbed with the pestle, until the proper consistency has been reached. Any glue color is applicable. If a lighter color tone is desired, zinc white should be added, but no gelatine solution. The paper is fastened to the table with tacks, and the color is distributed evenly with a brush such as used by painters. The paper is now ready for use and will keep as long as any paper of that class. For double transfer, the gelatine, in which the coloring matter is suspended, should be hardened by a small addition of chrome alum. The other technical part is the same as with the regular pigment prints, in which the colored transfer paper is used. As surface color for the red underground we have used the warm-black pigment of the Autotype Company. Even here bluish shades would appear, whose intensity depended upon the changeable thickness of the gelatine film.

To obtain the desired red effect in some special pictures, it may sometimes be necessary to add to the vermilion a little chrome red, green, brown, yellow or zinc white. The secret of the whole process is, that gelatine pigment printed upon gelatine pigment will give an entirely new third color, and this by toning of the surface print upon the underground; and the art of the new process is to produce by this double toning the best effects in individual cases. Color effects are thus obtained, which are unknown in the regular pigment printing process.—DR. BIESALSKI and DR. KRÜGER.

EXTRACTING AND ENLARGING SINGLE FIGURES FROM GROUP NEGATIVES.*

BY T. N. ARMSTRONG.

(**British Journal of Photography*, September 22, 1899.)

IT frequently falls to the lot of most photographers to undertake the enlarging of a small head or single figure which is contained in a negative or ordinary print, and is surrounded by other figures, such as are commonly seen in groups, and it often happens that such figures, by reason of their surroundings overlapping part of the same, cause no small amount of difficulty to a photographer when attempting to extract the figure for the purpose of future enlargement.

In all cases where the original negative is obtainable, there is no question as to the advantage of working on the same in preference to endeavoring to gain similar ends by manipulating a print made from such negative; but it often happens that the original negative is not forthcoming, and then there is no alternative but just to do the best with what material exists, such as a simple silver print.

Work of this description, as a rule, is seldom required from pictures that have been made within a recent period, but almost invariably fall to be conducted from photographs taken many years previously, and which are printed on albumenized paper, the texture of which is far more liable to offer difficulties than would be the case where they are printed on the more modern samples of Aristo or highly glazed gelatine or collodion surfaces.

A striking example of this sort of work has recently come under my observation, and which has proved of considerable interest in more ways than one. In the first place, the picture in question was made by means of wet collodion so far back as the year 1865. This was printed at the time on a sample of single albumenized paper, and, notwithstanding that this silver print has been subjected to the usual exposure in a family album, at the present moment it is absolutely free from any symptoms of fading, and is a strong proof of the permanency of a well-executed silver print by means of single albumenized paper.

So far back as the year 1865, the taking of groups, especially inside studios, by means of wet collodion, was generally done in small dimensions, and, therefore, each of the figures (or faces, rather) is very small in the picture to which reference is being made; these probably do not exceed a quarter to three-eighths of an inch, the whole group of eight people being printed in carte-de-visite size.

We hear a good deal nowadays against the permanency of pictures printed by means of silver. Yet here is an instance where a print is to all appearances as fresh to-day as it was thirty-four years ago, and is a striking tribute to the work turned out by the photographer whose name appears on the back of the card.

Somewhat recently the writer had the good fortune of spending a pleasant time with one who is now without doubt the oldest photographer in the west of Scotland, and who was an intimate friend of the brothers Mactear, and working alongside of them in the very first days of Daguerreotype and wet collodion. When speaking on the question of permanency, this gentleman remarked, "Oh, before double albumenized paper was known, fading was never thought about." But with its introduction a sad change was brought about, and he now can point to proofs innumerable of his assertions, maintaining that all his prints dating back from the earliest days of silver printing are quite permanent, but those printed in after years seldom stood at the outside beyond six or seven years at the best.

There is no doubt, however, that the grain of the paper is liable to cause more trouble when such small heads have to be enlarged from prints on single albumenized samples, and to avoid this grain, when work of this description has to be done, several methods have from time to time been advocated. One of these is to apply to the surface of the print a coating or wash of water-colored pigment, blocking out all the surroundings of the head it is desired to extract. Ivory black and Chinese white are, when mixed, suitable pigments to employ for this purpose, any depth from black to a light gray being easily obtained; the application of such a pigment to the face of a silver print will, with care, cause no injury, and, even in cases where

the object or head is very small in size, there is no difficulty to trace round the outlines of the face with the aid of a finely pointed sable pencil. When this first operation has been successfully accomplished, a negative in slightly enlarged form is made in the usual way, and this is subjected to a very thorough retouching, which will, if properly done, get rid of any coarseness which is almost certain to manifest itself. Enlargements made from negatives produced in this manner yield good results when finally worked up in black and white.

Another method which also yields excellent results is sometimes possible of accomplishment, having the further advantage of not requiring the application of any pigment to the surface of the print. This is done by providing a cut-out mask that just fits nicely around and suits the shape of the head that is being extracted; but how is any one to provide such small-sized masks as from three-quarters of an inch or thereby? Such masks are certainly not a marketable commodity, but larger sizes are, and any stock of lantern masks can be utilized for the purpose. When it is desired to mask off, say, the head and shoulders of a figure in a group, a lantern oval mask, having a white surface on one side, must be procured—any dealer will supply them in various shapes, and, having obtained one that just suits the shape required, it should be placed against a piece of black velvet and pinned to a board—the white side out, of course. This is then photographed in reduced size on a slow lantern plate, and, if a small stop be used and the plate backed and developed properly, a negative will be produced having clear glass in the center of the oval, and sufficient density around it to enable it being superimposed on the glass side of the negative which has been made from the paper print, and which it is intended to employ in the final enlargement.

In copying the paper print, much may be done to keep back the grain of the paper by so placing the picture in the best light for the purpose. This may mean using a somewhat direct source of lighting, but in nearly every case it will be more or less noticeable, and the negative, therefore, has to be skillfully retouched. In saying this, I am quite cognizant that there are those who dispute retouching in every shape or form; but my experience has taught me this, that any one who has to cater for the public taste and to earn his bread and butter by means of photography, cannot do without practicing it in nearly every subject and branch of work, and I should like to know what professional can honestly say he never resorts thereto.

The fact is, modeling is an absolute necessity in nearly every branch of photography, and especially is this the case in the work referred to; and not only must the modeling be applied to the negative, but the final enlargement will also be most wonderfully improved by its aid also.

It has been said that, in all cases where the original negative is obtainable, it is much to be preferred that it should be employed instead of a print from it. Of course, there will be no need for anything like the same amount of modeling when the original negative is available, and very probably no retouching of any kind will even be required, all that is necessary being the provision of some means to shield off objectionable surroundings to the head, and even in this event the work can be accomplished without manipulating the negative at all. In many cases this is the most desirable method to follow, simply because it does away with any tampering with an original, and very possibly a highly-prized negative, so that, in cases where the masking can be effected on the surface of the enlargement, it is better to arrange for it than to do so on the face or glass side of the negative.

To mask out objectionable surroundings to an enlarged head is by no means a difficult operation when proper materials are at hand for the purpose and the system employed in enlarging permits of it.

In large sizes, special cut-out masks will be required, but in smaller sizes any ordinary paper cut-out mount may be employed, provided the edges of the cut-out are true, so that, having selected the cut-out aperture, which suits the size and shape of the head and shoulders of the figure when it is projected in enlarged form on the copying board of the easel, and having carefully adjusted the focus of the enlargement, the sensitive paper is placed in position, and by means of the non-actinic cap

of the lens the image is projected on same. The mask is then fixed in position over the sensitive paper and the exposure made in the usual manner.

The services of a good printing frame may be utilized for holding the paper and cut-out mask *in situ*, and when the enlarging is accomplished by daylight, it is easily slipped into its proper position on the easel, and much comfort experienced in executing enlargements in this manner.

The vignetting of enlarged heads can also be accomplished by employing a suitable cut-out mount between the lens and the sensitive paper, arranging this at the proper distance in front of the easel, and when the form and other conditions of the negative permit of vignetting being resorted to, there is no doubt it is a very desirable method to follow. It must be borne in mind, however, that a few simple attachments will be required to hold the vignetter *in situ* during exposure. This may mean merely tacking the cut-out mask to a lath or flat stick, and nailing it on some support that will hold it steady during exposure, and the nearer it is placed to the sensitive paper the smaller the circle of light, and *vice versa*. But this is easily judged by pinning a sheet of white paper in the position the sensitive material is to occupy.

In using glass shields made in the manner suggested by copying white masks on lantern plates, the utmost care will be required to obtain absolutely clean, clear results, and, if on development of the plate it is seen that the black velvet from over-exposure has caused a reduction of the sensitive emulsion at those parts, the negative should be treated to a local application of some reducer, whereby such deposits are removed.

These glass shields are very useful, especially in cases where several enlargements are required from the same negative. By using these shields attached to the glass side of the negative, every enlargement is produced in exactly the same form, and if the same treatment is accorded each in exposure and development, there should be no appreciable difference between any of the results obtained by this method of shielding. With some of the other methods it is not so easy to get a number of enlarged prints all alike.

WATER FOR DEVELOPERS.*

BY CAPT. W. DE W. ABNEY, C.B. D.C.L., F. R. S.

THE subject selected for this article is one which may not seem to be of any or much importance, and yet it is one which—at all events by the amateur—ought to be attended to. During a long series of years the writer has photographed in Switzerland in summer and winter, and he has had occasion to notice the very different kind of results which have been obtained with the same developer at different localities, and it is believed that the same differences may be observed in perhaps a lesser degree in England. The subject has been so constantly in his mind that it has seemed that it must be common knowledge, and it was only after talking to a foreign photographer who was to be seen collecting water from rain falling on the roof of the Ryffel House near Zermatt, with which to mix up his developers, that it seemed a hint or two might be of use. The complaint at the Ryffel House was that no matter what kind of developer was employed when the water supplied to the hotel was used, density of deposit was impossible.

This fact was of old quite familiar to us, for when we were making solar observations at the same place, fourteen or fifteen years ago, density in the negatives was always deficient, and it was only by the use of rain or distilled water that the difficulty was overcome. The water in question is spring water, which probably comes from a limestone source, and is led by iron pipes to the hotel. It is an exceedingly palatable water, cold and free from sediment. The addition of a small quantity of carbonate of soda to it throws down lime, but beyond this it is difficult to say what solid matter it contains, but the fact remains that it is difficult to obtain density with it, and pyrogallol rapidly discolours with it. The image appears properly, and, before

* *Photography*, October 26, 1899.

fixing, might be judged to be correct, but treatment with hyposulphite, both with plates and films, leaves a thin and disappointing image.

Plates developed with rain or snow water behaved differently, giving the ordinary density and losing nothing extraordinary in fixing. It should be remarked that each kind of developer was tried on plates which had received similar exposure. With the plates developed with ferrous oxalate, when making the experiments alluded to above, there was always a difficulty in avoiding a deposit of lime. Some of the films and plates of this year were taken down to Zermatt and developed there, the water being that taken from the Mont Rose Hotel supply. These plates and films behaved as they should do, and excellent density was obtained. The water in this case was slightly turbid, it being taken from the Trift torrent, which is mainly supplied in the summer from the melting glaciers of Gabelhorn, Rothhorn, etc. It is thus in reality a soft water, and the small amount of turbidity has no detrimental effect, as it settles down to the bottom of the bottle in which the developer is mixed. Another mountain resort is Chamounix and the Montanvers Hotel, some 2,500 feet above it. In this last place the water is led by lead and iron pipes from a long distance, coming out of the rocks which form part of the base of the Charmoz. The rocks here are of a different geological formation, and the water has but little hardness. Photographs can therefore be developed properly with it, ample density being secured. Of Chamounix itself the same may be said.

It is no uncommon thing to hear of very different results being obtained by different people in England, some obtaining excellent negatives, and others finding them feeble, and this when using the same plates and the same developers. Blame by the latter is usually thrown on the plates, and the developer itself is often not suspected. It, however, may very well happen that the water used is at fault, and we advise in such cases that the effect of using rain or distilled water should be tried. Unfortunately, we have not analyzed the waters of which we ourselves have found reason to complain, so cannot say exactly what ingredient it is that is detrimental, so that we are somewhat in the dark from a theoretical point of view. If some of our readers have time to investigate the subject, it would be of great use.

It seems to us, however, that all developers should be tried with as pure a water as possible, and this is readily found in rain, snow, glacier or distilled water. If we add to a developer which needs a certain quantity of alkali to make it effective some unknown substance which may or may not neutralize such alkali in its entirety or partially, we are not giving the formula a fair chance. It may be that the gelatine itself may have something to do with the result. With a hard gelatine we all know that a weak image is rather the rule than the exception, and, if the matter in the water is of such a nature as to harden or to render the gelatine less pervious to the access of the developing ingredients, we might expect some such result as we found at the Ryffel House. It need scarcely be said that the want of density was not due to the use of too cold a water. The developer was often made up a day before it was absolutely employed, so that all chill had been taken away.

A lesson that is taught to the amateur who develops his pictures "as he goes" is that he should be wary, and not sacrifice too many of his exposures to the risk of flatness and thinness. When he knows that he will get the density that he requires at any place, of course he may proceed with his arrears of plates. We have advocated the system of developing whilst on tour at various times, but we now add this caveat.

It would be a useful and interesting research to carry out an investigation into the various waters in England, and see how each one affected the density, and from a collection of such facts it would be possible to predict if water from such and such a source should or should not be avoided.

There is also a further enquiry which would be of use, and that is, the reason why with certain brands of plates certain developers give (or are said to give) the best results. There seems no *prima facie* reason why this should be so, but the allegation is frequently made. It need scarcely be said that a qualitative test is not of much value. A quantitative one is that which proves or disproves satisfactorily the point. The various methods of measuring densities are so well known now that it is needless to describe any one as being the best.

THE ACTION OF BICHLORIDE OF MERCURY UPON PHOTOGRAPHIC PICTURES.

By M. GABELLE.

BICHLORIDE of mercury very quickly changes the color of prints toned in a gold bath, the colors passing into red, purple or violet. I have studied the appearance of old prints, which, to a great extent, had turned yellow, and have found that not only can the color of the picture be made more agreeable, but that the whites will also lose their yellow coloration and become quite clear again.

The composition of the bath which I use is as follows :

Bichloride of mercury (saturated aqueous solution).....	10	cubic centimeters.
Muriatic acid.....	5	" "
Water.....	85	" "

The proportion of these quantities is not absolutely necessary. The addition of muriatic acid is only required, when the prints have become very yellow in consequence of sulphide of silver formation, or if the picture film contains collodion, as in Aristo prints.

Regarding the bichloride of mercury, the result will always be the same, no matter how large the quantity is ; but it is, of course, preferable, not to use more than actually required.

The action is a direct one—almost instantaneous—at least with the so-called citrate of silver paper ; but the bichloride of mercury also acts with a clearing tendency on other paper, but much slower. Very yellow Aristo pictures, for instance, require pretty near a full day in the bath to obtain perfect whites.

After the bichloride of mercury bath, the prints should be washed for at least one hour with repeated changes of water. Every contact with fixing soda must be carefully avoided, as otherwise yellow spots will result, which cannot be removed again. The tone obtained with the bichloride of mercury bath varies from pink and red to violet. This is not the result of the fresh bath, whose function is restricted to the destruction of all sulphur formations and yellow and brownish colors, but it comes from the original toning and of the changes that have taken place therein by the action of time.

After having freshened up hundreds of old pictures with a pencil brush, and subsequent washing with a sponge, I tried to produce on some new pictures the same tone, that I had obtained in a number of the old ones. In the beginning I had nothing but failures, but after numerous experiments I succeeded in obtaining the desired tone. I would give no significance to these results, if the many experiments might not possibly lead to a new theory of the action of gold toning.

If a picture, toned in a separated toning and fixing bath, is drawn through a bichloride of mercury solution, hardly any change will take place. A picture consisting of pure gold, with scarcely any other foreign precipitate, does not change. If, on the contrary, the picture was toned in a fresh toning fixing-bath, it would take a brownish, and sometimes very ugly tone. The sulphur compounds of lead and

silver are removed, and pure gold and very little purple is left. But, if the tone fixing-bath had been used for some time and was restored by the addition of chloride of gold, the precipitate obtained would be largely purple. If the bichloride of mercury acts upon it, the picture, after disappearance of the sulphur tones, will appear in purple or violet, according to the time the picture remains in the tone fixing-bath.

I have spoken, so far, only of purple and violet gold, but in the pictures exists still another coloring element besides gold, that is silver, which sometimes remains in a large quantity. The yellow-brown silver, together with the purple, gives us all tones of the well-known silver picture color-scale. If the toning was of long duration, the final result will be a deep gold violet; if of short duration, a pure red will be the result.

To obtain durable prints, I consider it important to tone a pretty long time, so that the silver is removed as much as possible. The bichloride of mercury thus changes the silver to chloride of silver. To obtain, therefore, really fine prints of pure purple or violet, the following process has to be gone through.

Prepare a toning-bath as follows:

Old, used-up tone fixing-bath	750 cubic centimeters.
Fresh tone } { Alum..... 30 grams.	250 " "
fixing-bath. } { Hyposulphite of soda 300 "	
	{ Acetate of lead..... 1 gram.
	{ Water 1,000 grams.
Chloride of gold solution, 1 per cent.....	8 " "

This mixture is left standing for two days. The prints are then toned in it for about twenty to thirty minutes. They are then washed for three hours, and finally they are put for one minute into the following solution:

Bichloride of mercury (saturated solution).....	5 cubic centimeters.
Water.....	100 " "

After this the prints are carefully washed for one hour, protected from daylight or any other strong light, and then dried. The greatest cleanliness is required.

Translated by

HENRY DIETRICH.

LONG FOCUS AND TELE-PHOTOGRAPHIC LENSES.

MR. G. R. BAKER, in a recent number of the *British Journal of Photography*, says :

" In looking through some negatives, taken with a hand camera during recent years, and more particularly the earlier efforts, I could not help noticing the large percentage of views that would have been far better if taken with a long-focus lens. This more particularly applies to marine views, river scenery, and seaside work. On seeing a good picture, naturally one mentally expresses the opinion that such-and-such a part of it will make 'a pretty bit;' and if the finder on the camera is not such as to give an exact counterpart of the image produced on the sensitive plate, as in ninety times out of one hundred is the case, the result will be disappointing. For instance, a pretty bay, with a harbor forming the mid-distance, and a large ship sailing majestically out to form a nice break to the amount of sea, bathing machines

and people on the shore for a foreground. To the human vision nothing could well be more charming; but when the photographic plate is exposed and developed, the result is disappointing to a degree—everything except what is quite close is lilliputian—the ship that was such a prominent object is a mere toy boat, and the harbor projection is insignificant.

“One remembers taking a trip down the river, and nearing Southend a large liner is aground, with several steam tugs making an effort to get the huge ship off. The eye sees it all thoroughly well, and the picture is bold, but a snap-shot in passing gives a result such that even with a powerful magnifier the ship and tugs can only just be made out.

“Again, going down the River Rance, in Brittany, from St. Malo to Dinan, the pretty scenes on either bank are most fascinating, and, notwithstanding the river is not by any means such as would be considered broad, yet the houses, special landmarks, and interesting spots on the banks or border of the river are shown in the photographs of a size that most people would consider unimportant.

“In river work, at rowing or sailing matches, etc., unless one is like the venturesome Mr. West, and had a little boat of his own to ‘run up’ so close that they take serious risks of being ‘run down,’ the results will fall short, by a large amount, of what was desired. Instances, in fact, can be multiplied to any extent, but the above will suffice to show what cannot be done with hand cameras with lenses as usually fitted.

“Before me, as I write, are four examples taken with lenses of different foci from the same spot with a rapid rectilinear and tele-photo lens. The view comprises a church on one side of a street, with a chapel connected with some almshouses in the distance, which lies back from the main road running at right angles to the street. The distance of the chapel from the camera is about 100 yards. The first picture is that mentioned above, giving the chapel 12 millimeters wide on the plate, and is taken by the rapid rectilinear lens of 5 inches equivalent focus; the second, taken by one-half of the combination and about double the focus of the whole lens, produces an image on the plate of the chapel 20 millimeters broad. With the tele-photo lens, with partial extension and moderate power, the chapel appears on the plate 48 millimeters broad, and, with nearly full extension or greatest power, 78 millimeters broad.

“These photographs, taken to test an apparatus designed for long-distance photography, such as a war correspondent may be called upon to use if he wishes to record battle scenes, or obtain mountainous or other views, show that, even in the month of October and within four miles of Charing Cross, a passable print can be obtained from a negative having an exposure of one second with the tele-photo lens, notwithstanding the day was hazy but sunshiny, while with the 5 and 10-inch focus lenses the exposure was half a second. The stops used for the 5-inch lens were $f/8$; for the 10-inch, $f/64$, and the equivalent of the tele-photo would be $f/32$ and $f/52$ (about), respectively.

“Cameras with single lenses, having a focus of 20 inches and 32 inches, are very unwieldy; but, given suitable stands, so that the camera will not vibrate, some excellent results can be obtained with uncorrected single lenses, such as meniscus spectacle lenses. Two examples of hilly scenery I have that were taken by a friend of mine, Mr. Fluske, at a place in Kent, and show the objects on the distant hills, over a mile away, most clearly, while the letters on the sign-post, in the foreground, can be distinctly read, notwithstanding they were at a position far enough off for a man to be almost out of shouting distance. The tele-photo lens gives the same valuable result with a moderate size apparatus and with very little extra extension of the camera; for instance, with the highest magnification, only three times the normal extension.

“The American makers of cameras are paying special attention to long-focus combined hand and stand cameras, and one or two of our English makers are also making distinctive patterns of this order. With careful attention to detail and convenient stays to secure rigidity, it is quite possible to have a light and efficient camera for all-round instantaneous and time exposures.”

NOTE ON THE USE OF FATTY AMINES AS ACCELERATING AGENTS IN ALKALINE DRY PLATE DEVELOPERS.*

BY COLONEL J. WATERHOUSE, I. S. C.

ABOUT seven years ago, in Calcutta, it occurred to me that some of the amines might, perhaps, be usefully employed in place of ammonia, either in dry plate developers or in preparing thio-carbarnides for producing reversals. I got some out from Europe, but when they arrived I was unable to take up the subject, and having to come home on leave shortly afterwards, it was put aside and not taken up since. My attention has lately been drawn again to it by the publication of a very interesting and valuable paper by Messrs. Lumière and Seyewitz in the French photographic journals. (I have translated this paper, and it appears in full in the present number of the *Journal*.)

As I had some of my old materials still by me, it was easy for me to try some experiments, and I have done so with fairly satisfactory results.

Dipropylamine.—I began with dipropylamine, which appears to be a product of the action of alcoholic NH_3 on propyl iodide at 100 degrees Cent., and have found it work so satisfactorily that I have made most of my experiments with it, though Messrs. Lumière and Seyewitz say that the propylamines are not so powerful as trimethylamine, and, unlike it, produce dichroic fog, unless used in very small quantities.

The specimen of dipropylamine I have is a yellowish, oily fluid,† with a strongish ammoniacal smell, rather sharp, but not unpleasant, and quite different from trimethylamine. It is soluble in water, but not very readily. At first I used it rather in excess, and found it attacked the celluloid tray I was developing in, but I have since developed a celluloid film in a solution containing it, without any injurious effect, so that it can quite safely be used for such films.

I have tried it with several kinds of plates and with different developers, and in no case have had any trace of dichroic fog. At first, when I was using it alone and in rather strong pyro and hydroquinone developers, I thought it was very powerful in its effects, and it undoubtedly was so, but in comparing it side by side with ordinary developers containing caustic or carbonated alkalis, which in each case were replaced by the amine, it either seemed to produce an almost identically similar effect, or in some cases, where caustic alkalis were used, a rather weaker one. It cannot, therefore, I think, be recommended as being more powerful than the alkalis, but it works at least equally well, and may replace caustic alkalis when these cannot well be used. Further trials are, however, required to prove its practical value. The time of year is not the most suitable for such experiments.

I may say that the developers mixed with dipropylamine are not

* From the *Photographic Journal*.

† Some since freshly received is quite colorless, in other respects much the same.

at all unpleasant to use ; the smell of the amine is not so strong or so pungent and irritating as ammonia. The price is rather high, about 4s. 6d. an ounce ; but as only very small quantities are used, and the developers do not readily discolor, and enable several plates to be developed in succession without much appreciable loss of power, the expense of using it would not be prohibitive, and if a demand arose for the product it might become cheaper.

It is possible that the true anhydrous propylamine would be more powerful than the dipropylamine, but it is very much more expensive.* What is often sold as propylamine in 10 or 20 per cent. solution is, I believe, trimethylamine, the two being isomers. As will be seen further on, the medicinal solution does not seem to be suitable for photographic use.

Dipropylamine has been found to work well with pyrogallie acid, hydroquinone, pyrocatechin, and with metol very satisfactorily with many kinds of plates. I have not yet tried it yet with any of the para-midophenol developers, but have no doubt it would work with those also, as well as with ortol and glycin, etc. I have brought with me several plates of various kinds developed with these developers from which you will be able to judge as to its capabilities.

Pyrogallie acid.—With a solution of—

Pyrogallie acid	1 part
Soda sulphite	5 parts
Dipropylamine	2 to 3 “
Water	100 “

strongly well-exposed negatives, with a slightly yellow color, were produced with short exposures. Using Lumière's pyro-sulphite solution and adding the dipropylamine in place of acetone in the proportion of 1.75 per cent., the negatives obtained with about the same exposures were thinner, but clearer, and not so yellow.

Hydroquinone.—The hydroquinone developer was made up in the same proportions as the pyrogallie, adding 1.75 parts of dipropylamine per cent. With this I obtained on an Ilford “Ordinary” plate, using an 8-inch focus Ross-Zeiss lens at $f/9$, with about one second exposure on a very dull December day, a well-exposed dense plate of a view. An interior taken in the same way with three minutes' exposure on the same day also gave a fairly well-detailed negative, even in the deepest shadows, though rather dense in the high lights. A plate taken under exactly the same conditions with an ordinary pyro-soda developer appears very much underexposed.

Having in view the great density obtained on the plates developed with hydroquinone and dipropylamine, it occurred to me to try it for reproducing a piece of black and white line work on Ilford “Process” plates. For this I used the same developer, but with rather less of the dipropylamine, about 1.5 per cent. Using a small Ross's portable symmetrical lens at $f/16$ I found that less than two minutes' exposure was sufficient to produce a good dense negative inside of a room, the print to be copied being placed about 6 feet in front of the window and the day being very dull.

*Trials of anhydrous propylamine with pyrogallol have given good results, but not better than the dipropylamine

Next day was rather brighter, and I tried again with some of Mawson's photo-mechanical plates, using the formula for hydroquinone and caustic potash developer as given on the box, but slightly modified.

<i>A.</i> —Hydroquinone.....	1	part.
Potash metabisulphite.....	1	"
Potash bromide.....	0.2	"
Water to.....	100	parts.
<i>B.</i> —Caustic potash.....	2	"
Water.....	100	"

A and *B* being used in equal parts.

Side by side with this, half of each plate was developed in some of the same developer made up to the same strength, but with the caustic potash replaced by dipropylamine in the proportion of ten minims to the ounce of developer. In this case the developer containing caustic potash was undoubtedly far the more powerful of the two when working with the Mawson plate, but with an Ilford process plate the two halves developed with much the same density, the dipropylamine negative having a bluish tinge while the potash one was decidedly brown. This, at any rate, shows that the quality of the plate counts for a good deal in estimating the value of developers. From these experiments it seems likely that dipropylamine could be usefully employed with hydroquinone for interiors or process work. The unexposed edges of the plates were quite clear and free from fog.

Metol.—A stock solution of metol was prepared :

Metol.....	1	part.
Soda sulphite.....	5	parts.
Water to	100	"

To 45 parts of this, 15 parts of a 10 per cent. solution of potash carbonate were added. To a similar quantity of the stock solution 1.25 parts of dipropylamine were added, with water to make up 60 parts. Plates of various kinds not of the greatest rapidity were then exposed on a view with slow instantaneous exposures, and it was very curious that in almost all cases, the results given by the two developers were nearly identical, the plates being cut in half and the pieces developed side by side in the two developers for the same length of time. As a rule most of the plates tried gave very good results, though some did not.

After five or six plates had been developed, both developers were quite colorless, though strongly fluorescent, and would probably have answered for several more plates. There were no signs of dichroic fog or any abnormal action.

Pyrocatechin.—The pyrocatechin developer used consisted of :

Pyrocatechin (Ellon's).....	2	parts.
Soda sulphite, crystals.....	10	"
Water to.....	100	"

20 parts of this were added in the one case to 40 parts of a 10 per cent. solution of potash carbonate, and in the other to 40 parts of water, containing 1.25 parts of dipropylamine. The results obtained with this developer were not altogether so satisfactory as with the metol and other developers. In some cases the densest image was given by

the potash, and in others by the dipropylamine. Again the Ilford "Ordinary" plate, with about half a second exposure, gave the best result, and the two halves were almost identical, both showing good detail and density. There was no fog on any of the plates and even in one case where a plate was given a very short exposure and forced up by adding an excess of the dipropylamine, although the plate was fogged, it was not distinctively dichroic.

Further experiments with fresh dipropylamine and pyrogalllic acid have confirmed the results obtained with the old material. I have also tried it with eikonogen (Andresen's) in about the same proportions as the other developers with 1.5 per cent. of the amine, and under similar conditions obtained very satisfactory negatives. In the case of a rapid plate given a very short exposure, about $\frac{1}{60}$ second, the development proceeded very slowly and the plate showed slight dichroic fog, but a slower plate of the same brand, exposed as usual from half to one second, and developed in the same developer, gave no trace of the fog. Further trials with rapid plates are therefore necessary to prove the value of this amine for cinematograph or similar very rapid work.

Trimethylamine.—According to Messrs. Lumière and Seyewitz, trimethylamine acts with greater energy in developers than ammonia and the caustic alkalis, and at the same time is the only one of the methylamines, or even of the other amines, which does not produce dichroic fog. My trials of this substance were made with some of the ordinary 20 per cent. solution freshly obtained from one of the first London houses, and sold, I believe, for medicinal purposes. Using this with pyrogalllic acid or hydroquinone developers, I obtained very fair results as regards detail and density, but all the plates tried showed bad dichroic fog, and as it is unpleasant to use in a house I did not go further with it.

Taking, however, some trimethylamine hydrochlorate, which came to me seven years ago, and dissolving 1 part of it in 3 parts of a solution of caustic soda at 10 per cent., and adding this to 45 parts of the stock solution of hydroquinone (*A*) used for Mawson's photo-mechanical plates, I obtained a developer which gave very fair results on a view, and with absolutely no trace of dichroic fog, so that I have no doubt that pure trimethylamine would be free from this defect.

Further trials with a pure solution of trimethylamine in 33 per cent. solution have shown me that though it is a very effective adjunct to the pyrogalllic acid developer, and works free from dichroic fog, its very unpleasant and persistent smell, as well as its high price, would render it quite unsuitable for ordinary work—certainly for amateurs.

Diamylamine.—The only other amine I have yet tried is diamylamine. This has not an unpleasant smell, but is an oily sort of liquid, very insoluble in water, and although it has fair developing powers used in conjunction with pyrogalllic acid, and probably with other developing agents, I found it caused streaks and markings on the plates which made it useless. It seemed also to form with the developing agent an insoluble magma which collected round the sides of the

developing tray. It is more soluble in alcohol, but this is no help in developing gelatine plates, though it might be so with collodion. I found no signs of dichroic fog in using it. This and the triamylamine are only very slightly soluble in water, and therefore not likely to be of use in developers.

Amylamine.—Trials since made with some amylamine, which I had overlooked among my chemicals, have given me much more satisfactory results than the diamylamine. It is easily soluble in water. The smell is peculiar, and somewhat pungent, but it is not unpleasant in use.

I first tried it with hydroquinone in the same proportions of 1 part hydroquinone, 5 parts sulphite, in 100 of water, with 1 part of amylamine added.

The first two plates (Ilford "Ordinary") exposed as before, developed very well, but were very yellow in the unexposed edges. A third plate (Imperial "Ordinary") developed very well, and did not show any trace of this yellowness, nor did an Ilford plate exposed under the same conditions the following day and developed in the same developer after standing all night. It is possible, therefore, that a smaller quantity of the amine would be better. On a Lumière plate, given about $\frac{1}{45}$ th second exposure, slight dichroic fog appeared.

With pyrogalllic acid and amylamine in the same proportions as above stated, I obtained very good negatives with the same three kinds of plates, and no trace of yellowness or pink fog.

I have yet to try it with other developers, though it seems to have no advantage over dipropylamine, and is much more expensive.

Ethylamine.—Trials with ethylamine have shown that it can be used successfully, and is very powerful in its action. In working with pyrogalllic acid with different brands of plates, I had no trace of dichroic fog, but with hydroquinone I found that the more rapid plates such as Imperial "Sovereign" and Lumière "Extra Rapid," were prone to it, especially the latter, but the slower plates, Ilford and Imperial "Ordinary," gave very clear negatives, quite free from any trace of dichroic fog. To 100 parts of the 1 per cent. hydroquinone developer I added about 3 parts of a 25 per cent. solution of ethylamine in water, and the same with the pyrogalllic. It has also worked well with metol, but the more rapid plates with short exposures show a tendency to dichroic fog, which the slow plates are free from. Increase of the amine adds to the tendency to dichroic fog. There is nothing unpleasant in its use, and it is well worth further investigation.

Tetretethylammonium Hydroxide.—I have also made some trials with tetretethylammonium hydroxide, which has very strong alkaline properties, and seemed likely to be useful. I have found it act well with pyrogalllic acid and hydroquinone, but have not yet been able to ascertain the best proportions for its use, and hope to make further trials. I have had no trace of dichroic fog with it, and there is no unpleasant smell.

So far as I have been able to ascertain, dipropylamine seems most likely to be of practical value, but the price must prevent its general use at present, though it is much cheaper than the other amines.

It is very possible also that these substances might be of use in replacing ammonia in emulsion making and orthochromatic sensitizers, but this requires investigation.

As will be seen from the above, many of these amines have more or less tendency to produce dichroic fog, but I have not found it occur to the extent I had anticipated from Messrs. Lumière's experiences, though plates of their manufacture have been rather more prone to it than the slower plates of English manufacture tried.

Messrs. Lumière and Seyewitz have rendered a great service in bringing these substances to notice, and it is to be hoped that some practical use may be made of them.



THE INTERNATIONAL ANNUAL of Anthony's Photographic Bulletin, Volume XII for 1900, is before us for review, and, while it is similar in style and general make-up to the preceding volumes, it contains matter and illustrations of a quality that will make it rank with any previous issue. Among the many articles that will especially interest the advanced amateur and the professional worker may be mentioned, "Gain or Loss," by Professor C. H. Cox; "Photographing Architectural Detail," by Robert J. Hillier; "The Hanging of Pictures," by F. C. Lambert; "Lens Nomenclature," by Dr. John Nicol; "Photographing Flowers," by James Shepard; "Skies in Landscape Photography," by Joseph F. Smith; and "Method of Using Bromide Paper," by Henry F. Raess; "Local Development," by Osborne I. Yellott; "Odds and Ends," by Henry Wenzel, Jr.; "The Retouching Knife," by Henry Erle Cooper; "Developers," by E. O. Cockayne, and "Pictorial Values," by W. M. Stine. Three papers on lenses, by Frederick Thomas Bennett, C. M. Giles and Chapman Jones, treat of vexed questions of focal length, and contain much good matter in the

way of advice and suggestion. Newton W. Emmens contributes a valuable article on "Ammonium Persulphate," which is illustrated with examples from plates before and after treatment.

A valuable article by W. H. Walmsley on "Photomicrography for Everybody," and one on "The Range of Triple Mid-Air Kite Photography," by William A. Eddy, are of special interest.

"A Résumé of the Progress of the Photographic Surveying Method" is contributed by J. A. Flemer, which brings the history of this most important application of photography to the present time. Other articles of value and interest go to fill out a total of seventy-two articles, including five, dealing with practical questions in photography as applied directly to process work, by Major-General Waterhouse, J. Gaedicke, Commandant V. Legros, H. Woodbury Shaylor, Jr., and H. D. Farquhar. These contributions fill 194 pages, and are embellished by nearly 40 full-page and more than 100 text illustrations, and are followed by more than 100 pages of formulas, tables and lists of societies. The volume is published as usual at the price

of 75 cents in paper, postage 16 cents extra, and \$1.25 in cloth, postage 20 cents extra.

The advance sales of the Annual indicate very plainly that the entire edition will soon be exhausted, as was the case last year with Volume XI.

PHOTOGRAMS OF THE YEAR 1899.—Published by Dawbarn & Ward, Limited London. Paper covers, 50 cents; cloth 75 cents; postage extra.

The present volume constitutes No. 5 of the series, and is larger and more profusely illustrated than any of its predecessors. Its criticisms and reviews of the English photographic exhibitions of the year form an important feature, and its illustrations are from many of the best workers in photography throughout the world. The artistic quality of the original photographs makes one wish that they had received a little better treatment at the hands of the printer, for, while the plates seem to be beyond criticism in most cases, the reproductions strike an American as lacking in brilliancy.

It may be, however, that this treatment is intended to harmonize with the somewhat vague and soft-focus effect which characterizes so much of the English work of the present day. The volume is a good one, however, and one which should be in every photographic library.

THE PROCESS YEAR BOOK FOR 1899 (*Penrose's Pictorial Annual*). A Review of the Graphic Arts. Volume V; 108 pages text, 7 x 10 inches, on woodcut paper, with 78 supplements and 53 illustrations in the text. Edited by William Gamble. Price, \$1.50 post paid. Sole American agents, Tennant & Ward, New York.

Few books have won so enviable a reputation in so short a time as that enjoyed all over the world by *Penrose's Process*

Year Book, first issued in 1895. It is not only most interesting in its information but extremely attractive in its many illustrations. The articles are by practical workers, whose names and work are known wherever process blocks are made. W. Gamble, Colonel Waterhouse, W. Cronenberg, Max Levy, M. Wolfe, Oscar E. Binner, W. D. Richmond, C. G. Zander, George Dawson, Horace Wilmer, Chapman Jones, E. Sanger Shepherd etc. The illustrations include examples of photogravure, collotype, four-color and three-color work, half-tones in one and two printings, the new "Rembrandt" method, giving prints resembling artistically toned photographs, a beautiful "photocrom" view, and more than fifty selected illustrations, initials, etc., in the text.

The new volume is notable for the amount of information and illustration it contains, dealing with three- and four-color work. This subject is invariably dealt with from the practical standpoint, and by men who are authorities in their departments. An exceptionally valuable paper is that contributed by Colonel J. Waterhouse, on "Etching Fluids for Copper," practically covering the whole field. "The Half-Tone Theory Graphically Explained" is another paper worthy of special mention.

Briefly, the book is one which everybody interested in process reproduction should see, and which, having seen, will desire to possess. It is printed on fine woodcut paper and bound in cloth, with a cover of artistic design.

LAINER'S *Lehrbuch der Photographischen Chemie*, second part, published by R. Lechner (Wilh. Müller), Vienna, has made its appearance. It treats, in 132 pretty closely printed pages, of the chemistry of the Benzole derivations, and, being to a great extent extracts from lectures given by Professor Lainer, it is explanatory in its description. It is printed in the German language.







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